IRISH BIOGEOGRAPHICAL SOCIETY

Bulletin No. 1. *1976 - 77*

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BULLETIN NO. 1

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BULLETIN OF THE IRISH BIOGEOGRAPHICAL SOCIETY

No. 1 1976/77 March 1977

When production of an I.B.S. publication was first mooted it was envisaged as a house journal, on the one hand to provide members with an outlet for their views on matters relating to distribution of Irish fauna and flora and on the other to provide a record of the society's work. Production costs were to be kept minimal, so that we could publish discursive texts so much needed in considering distribution phenomena, yet unacceptable else where due to lack of space. These objectives still hold true, but as can be seen from this issue, the Bulletin (as we decided to name it) has become rather more than a house journal. Such a wealth of material has been offered for inclusion in the Bulletin that we already have an 'embarassment of riches' in this respect.

The major society event recorded in this issue is the Athlone Field Meeting. Most of the information gathered at that meeting is presented here and I am grateful to the various authors that they have processed their material such that it can all appear together. It is indicative of the poor state of knowledge of Ireland's arthropod fauna that the field meeting produced one species new to the British Isles, three further species new to Ireland and an additional six species whose presence in Ireland was previously regarded as doubtful! This situation is further demonstrated in the contributed articles, since Martin Luff's record of Harpalus puncticeps from Bull Island represents the first definite record of this ground beetle in Ireland.

It would appear that the frequency of appearence of the Bulletin is likely to be dicated more by the finances of the society than by the volume of material available for publication. The fear has been voiced that we might compete with other journals for material for publication. That is not our intention. I would welcome members' views on the Bulletin's actual or potential content and would draw the attention of authors to the 'suggestions for authors' included in this issue.

We regret to note the death of one of our members, G.J. Sheehan, who will be particularly remembered for the help and encouragement he gave to many interested in natural history in Ireland, particularly in the Dublin area.

M.C.D.Speight. Editor.

BULL. IBS.: SUGGESTIONS FOR AUTHORS

I have listed below a number of suggestions which I hope authors might follow, when considering the format they will use for material they wish to place in the IBS bulletin. My aim has been simply to achieve uniformity of presentation with items such as references, species names and records, and to avoid problems of mis-interpretation and illegibiligy which can arise with closely written, hand written copy. If authors can more or less follow these suggestions I would be very grateful.

1. Typed copy much preferred to hand-written copy: if hand-written then please try to take care all is legible.
2. It helps greatly if copy is 'clean' i.e. not emblished with a mass of super-imposed corrections and corrections of corrections.
3. Double spacing (alternate lines, if hand-written) preferred, so that corrections are obvious and editing can be carried out easily.
4. Acknowledgements: if there are any, after text and bfore references is a good place for them.
5. References: where mentioned in text please refer to, using author's (or editor's) name, plus year of publication e.g. O'Shagda (1976); the full ref. then appearing at the end of the text as follows:-

   O'Seaghdha M.D. (1976) Coprolites from Provencal soutteraines. J.Med.Arch., 7, (5), 21-376.

   Present details of periodicals either in full or abbreviated form as you wish, but please underline their names and volume numbers and give parts (where relevant) in brackets, as in the fictitious reference above. It would also help if references could be given in alphabetical order when listed at the end of the text.
6. Species names: when a genus is mentioned for the first time, please give its generic name in full e.g. Kisme; after that it can be abbreviated e.g. K.kate. Since latin names are often meaningless to readers who don't specialise in the same group please give common names at strategic points, such as where a group or genus is mentioned for the first time e.g. butterflies of the genus Kisme.
7. Records: because distribution records of animals and plants are likely to provide one of the main foci of the bulletin I think it would be worthwhile to ensure that certain minimum information is incorporated into each record made, as follows:-

   a) latin name of organism, plus describers name
   b) statement of reference work used as a source of nomenclature
   c) locality details including at least 4-fig. national grid reference, county and some ecological information about the collection site
   d) collector's name
   e) identifier's name (where different from collector's name)

8. Diagrams: please use black on white and avoid large solid areas of black. Shading should be by means of lines or dots, not half-tones. We cannot reproduce colours at present. Finally, please produce diagrams the size you wish them to appear in the bulletin.

Note:

It is my intention that manuscripts received will undergo minimal editing. Where anything more than a few "ands and buts" are inserted or deleted, I would presume to return a manuscript to the author for his/her approval of the changes, before passing it forward for inclusion in the bulletin.

Articles for publication, in Bulletin No. 2, should be submitted to the Editorial Committee, not later than the 18th November, 1977. Contributions should be sent to the following address:-

St. Michael's,
Meath Road,
Bray,
CO. WICKLOW

Ed.

THE ATHLONE WEEKEND FIELD MEETING

The main field meeting of 1976 was held in the Athlone vicinity from 18th-20th of June. Twenty-nine people attended. Some of us stayed in one of the hotels in Athlone, the rest of us were under canvas! Mr. Levinge kindly allowed us to use a lake-side meadow nearby Creaghduff House. On the Friday evening we met in the hotel and sorted out who would work on which transect etc. the following day, the party in this way being subdivided into groups of 2 or 3 people. Most of us spent Saturday on Hare Island, ferried there in Mr. Levinge's boats, though those involved in laying pitfall traps and a vegetation transect through the pasture by Coosan Lough spent the morning on that job. During the day, the weather got steadily worse, so that by mid-afternoon it was drizzling more or less continuously. On Saturday evening we gathered in the hotel and lively discussion ensued, on the relative merits of different forms of field excursion and their objectives. On the Sunday, the party dispersed to different locations round L. Ree, with the intention of sampling the shore flora and fauna in as many grid squares as possible. The weather was luckily rather better. In late afternoon a small group made a return visit to Hare Island, among other things to empty and collect the malaise trap which had been erected there. To our consternation the trap had quite vanished, down to every last peg and guy rope! It was with great relief that we discovered that one of the Island's inhabitants had taken the trap home with her, in the belief that we had mistakenly left it behind and would lose it to some casual visitor, were it left erected. As Sunday evening progressed, we began to disperse homeward, a final event being to collect the pitfall traps, and event enliveded by the presence of a herd of very large cows, just driven into the pasture. Retrieving the traps proved a race against the cows' curiosity, since the sticks set in to mark the positions of the traps evidently provided foci of bovine attention and were solemly employed as chin-rubbing posts. Luckily the traps themselves were all undamaged in situ when collected.

ATHLONE FIELD MEETING: A GENERAL DESCRIPTION OF L. REE AND SURROUND

Daphne E.S. Levinge

Lough Ree, the central of the three Shannon lakes, was formed by a combination of ice action and solution of the underlying Carboniferous limestone (Charlesworth 1963). The shoreline of the lake is deeply indented and the greater part of the lake is less than 10m deep with numerous islands and shoals. The surrounding land is well covered with a calcareous boulder clay, and the land adjacent to the lake is usually fringed with limestone woodland or scrub, with a narrow strip of grazed limestone grassland leading down to the waters edge. The shoreline is mostly stony, with some sand and gravel and the development of reed beds is restricted to some of the sheltered bays, especially where silt is being deposited by inflowing rivers.

LOUGH REE

Lanesborough

Co Longford

Co Roscommon

Co Westmeath

HARE IS.

COOSAN POINT

Athlone

county boundaries - - - -

miles

0 1

Some work has been carried out on the bryophytes by King (1953) and in addition the vegetation of the area has been surveyed by a group of Dutch workers in 1968 (Klein unpublished, Hessel and Rubens 1971, Rubens 1975). Barrington and Vowell (1887) compiled a list of the more interesting vascular plants, and a similar list was drawn up by Levinge (1894) for Co. Westmeath and this included the Leinster shores of the lake. Praeger (1900) records some observations of botanical interest made on the northern part of the lake and in a more detailed description mentions the characteristic plant species of the shores and islands (Praeger 1935). In addition Levinge (1971) describes the vegetation of a small isolated island in the lake.

In 1889, a Dublin Naturalists' Field Club excursion to Athlone and its environs took place with intensive collecting of some insect groups in the Hare Island area. This forms the basis of species lists drawn up by Cuthbert (1900) and Halbert (1900). In addition King (1889) and King and Halbert (1910) report on the neuropterous fauna in the area of Hare Island.

Some aspects of the biology and chemistry of the lake itself have been described in a preliminary study by An Foras Forbartha (1975) who show the lake to be typically alkaline and eutrophic with no obvious signs of enrichment. The phytoplankton of the lake have been described for the northern area of L. Ree by Macan and Lund (1954). Southern and Gardiner (1938) also include a description of the phytoplankton of L. Ree.

ATHLONE FIELD MEETING: HARE ISLAND, L. REE

Daphne E.S. Levinge

Hare Island is the third largest island of L. Ree, occupying an area of c.45ha. in the southeastern corner of the lake (Fig. 1). It's closest distance to the mainland, approximately 0.3Km. is to the south east (Co. Westmeath). On all other sides, especially the north and north west the island is remote from the lake shores. Hare Island is composed of boulder clay, no underlying limestone outcrop appearing, its highest point being 50 metres and approximately 14 metres above the lake level (Summer). The western shores are exposed, facing winds with a fetch of 3-6Km. Consequently its shores are rocky with a gentle slope. The eastern shores differ with a more rapidly shelving slope and are composed predominantly of sands and gravels. All the rocks and pebbles underwater are heavily encrusted with a calcium carbonate deposit. The level of the lake varies, showing a seasonal oscillation of 1.2-1.5 metres, which causes inundation of vegetation around the lake edge during the winter months.

The vegetation of the island is predominantly oak woodland with some grazed grassland in the central area. The woodland has been relatively untouched by man during the last 200 years, although there is some evidence of 19th century tree felling. In recent years the island has been farmed, grazing being restricted to the grassland and eastern part of the island.

There are two houses on the island, one being occupied at present, and there has been some planting of ornamental trees and shrubs. Rice (1974) provides some information on early human activity on the island, the earliest being the foundation of a monastic settlement in 541 A.D., evidence of which still remains.

Note: Plant nomenclature throughout follows that of the Census Catalogue of the Flora of Ireland, M.J.P. Scannell, and D.M. Synnott, Dublin, The Stationery Office, 1972. (See species list Pp.17).

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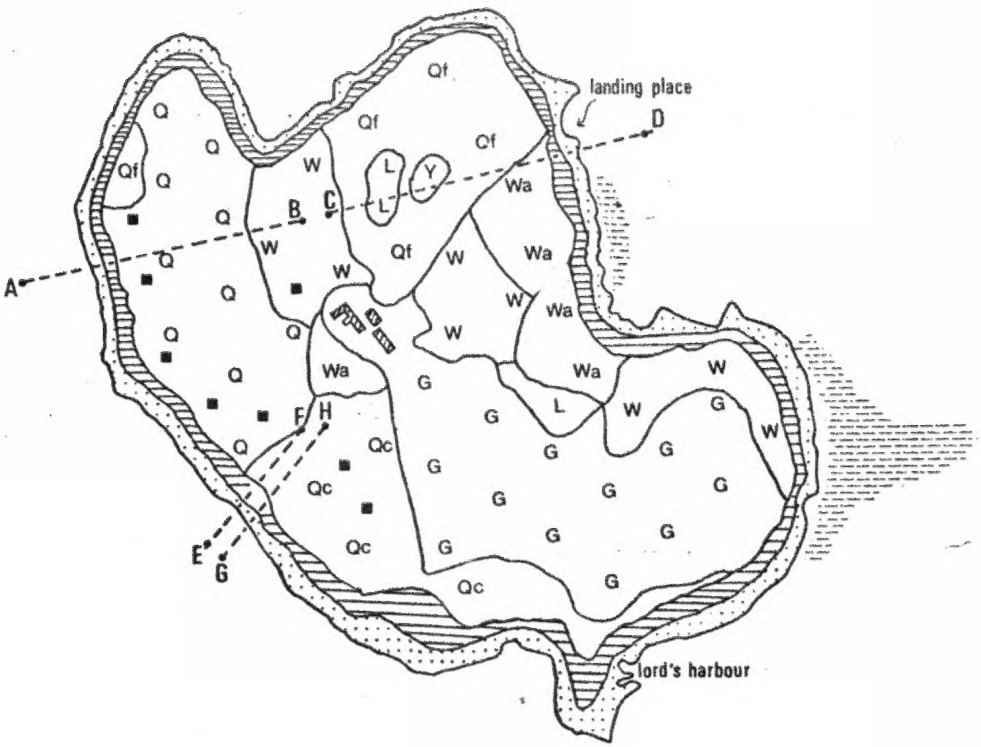
HARE ISLAND

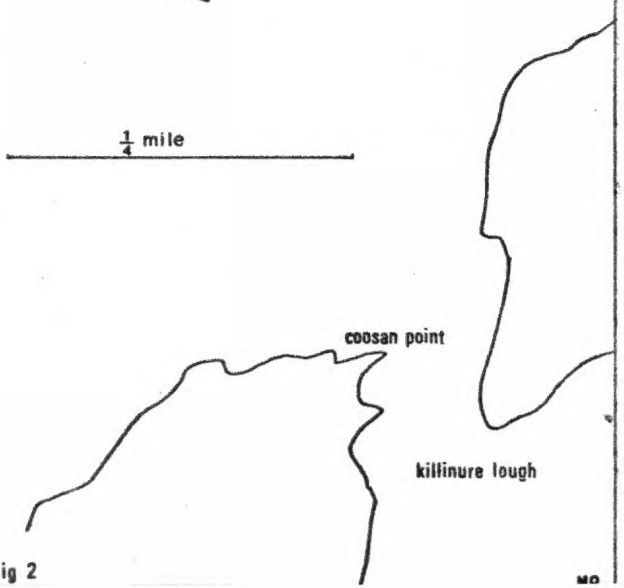
Main Vegetation Types



¼ mile

Transects:

A←---→B exposed
C←---→D sheltered
E←---→F ungrazed
G←---→H grazed



Surveyed by T. Harrington
B. Arnold
M. Quigley

fig 2

KEY TO VEGETATION TYPES IN Fig. 2.

Q. Quercus dominated woodland (Q. petraea x robur); with Holly Ilex aquifolium, Ash fraxinus excelsior, and Hazel Corylus avellana, in the understorey. Ground layer consisting of Rubus fruticosus, Scilla non-scripta, Luzula sylvatica, and Pteridium aquilinum.

Qc. As above but Hazel more abundant.

Qf. Quercus woodland with a high percentage of Ash(40-50%), and scattered Sycamore, Acerpseudoplatanus, Hazel and Hawthorn Crataegus monogyna.

W. Mixed woodland of Oak, Ash, Sycamore, Birch Betula pubescens, Elm, Ulmus glabra. The understorey consists of saplings of the above species. Hazel and Elder Sambucus nigra, are also present. Scilla non-scripta, Rubus fruticosus, and Dryopteris diltata, are abundant in the ground layer.

Wa. Woodland dominated by Ash, and Sycamore, with Agrostis stolonifera, Geum urbanum, Sanicula europea, and Dryopteris filix-mas, in the ground layer.

G. Grassland; principal species include Lolium perenne, Cynosurus cristatus, Agrostis stolonifera, Rumex acetosa, and Trifolium repens.

L. Stands of Cherry Laurel, Prunus laurocerasus, which have been planted.

Y. Stands of Yew, Taxus baccata

Supra-littoral scrub zone- principal species are Salix atrocinerea, Betula pubescens, Ash, Viburnum opulus, Euonymus europaeus, Rhamnus catharticus.

Littoral zone - approximately 4 metres wide, with Littorella uniflora, Mentha aquatica, Carex serotina, Agrostis stolonifera, Phalaris arundinacea, Achillea ptarmica, Teucrium scordium. Filipendula ulmaria, Lysimachia vulgaris, Succisa pratensis, and Lythrum salicaria.

Scirpus lacustris. beds.

Sites of occurrence of Cephalanthera longifolia.

ATHLONE FIELD MEETING:
EXPOSURE EFFECTS ON HARE ISLAND.

P. H. Carvill

The wooded islands of the Shannon lakes show interesting wind exposure effects. Trees on the windward side are very stunted: moving towards the lee side, there is a gradual increase in the height of the trees, as they become progressively more sheltered. This effect has been mentioned by Praeger (1934). Observed from the north or south, the island profile is thus wedge-shaped, the point of the wedge being directed into the prevailing wind.

What, then, is the result of this marked exposure gradient which occurs on these islands?

To investigate this, two transects were made, one running from the eastern side of Hare Island, the other from the western side, into the central area of oak woodland. Quadrats were placed at three metre intervals, each species present in these quadrats being recorded, and its cover value estimated. A summary of the results obtained is given in tables 1, 2 and 3. In these tables, all species occurring in only one of the total number of quadrats (28), have been omitted.

Table 1: Plant Species occurring on the east (sheltered) side of Hare Island only

	No. of quadrats in which present	Cover (Domin scale)
Mentha aquatica	5	1-2
Lysimachia vulgaris	5	+-1
Fagus sylvatica	5	+-2
Senecio aquaticus	4	+-1
Alnus glutinosa	4	2-5
Juncus articulatus	3	+-2
Carex serotina	3	1-2
Achillea ptarmica	3	+-1
Potentilla anserina	3	+-2
Carex flacca	2	+
Carex panicea	2	+-2
Circaea lutetiana	2	+

(Species ordered according to the number of quadrats in which they are present)

Table 2 : Plant Species occurring on the west (exposed) side only.

Pteridium aquilinum	6	+-3
Angelica sylvestris	5	+-1
Conopodium majus	5	+
Cephalanthera longifolia	4	+
Cinclidotus fontinaloides	3	+-2

Vicia cracca	3	+-1
Brachypodium sylvaticum	3	+
Taraxacum officinale	3	+
Dactylorhiza sp.	3	+
*Populus nigra	2	+-1

(Species ordered according to the number of quadrats in which they are present)

*A clonal population, no doubt derived from a shoot or branch washed ashore. This species is not indigenous.

Table 3 : Plant Species occurring on both sides. (14 quadrats per side: cover values are in the Domin scale. Species are asterisked on the side where they are commonest).

	East side (Sheltered)		West side (Exposed)	
	No. of Quadrats	Cover Range	No. of Quadrats	Cover Range
Euonymus europaeus	*6	+-1	2	+
Mentha aquatica	*5	+-2	3	+-1
Agrostis stolonifera	*5	+-3	3	+-2
Filipendula ulmaria	*5	+-3	3	+-1
Acer pseudoplatanus	*5	+-3	3	+-1
Lythrum salicaria	*5	+-1	2	+
Teucrium scordium	*4	+	2	1
Hydrocotyle vulgaris	*4	+-2	1	+
Eupatorium cannabinum	*4	+	1	+
Primula vulgaris	*4	+	2	+
Viburnum opulus	*3	+	1	1
Viola sp.	10	+-1	11	+-2
Phalaris arundinacea	2	1	2	1
Rosa rugosa	2	+	2	+-2
Lysimachia nemosum	2	+	3	+
Lonicera pariclymenum	2	+-2	3	1
Listera ovata	2	+	1	1
Succisa pratensis	1	+	1	+
Crataegus monogyna	1	+	2	+
Hedera helix	8	+-2	*11	+-2
Rubus fructicosus	7	+-5	*10	+-3
Fraxinus excelsior	6	+-3	*11	+-1
Quercus robur/petraea	5	2-4	* 8	3-4
Oxalis acetosella	3	+	* 6	+
Solidago virgaurea	3	+	* 8	+
Sanicula europaea	2	+-1	*10	+-1
Anemone nemorosa	1	+	* 7	+-1

(Species ordered according to the number of quadrats in which they occur on the east side, to allow for ease of comparison with their occurence on the west side.)

Discussion

The following observations may be made from these results:-

1. The greater development of aquatic and damp grassland communities is on the sheltered side of the island. Even in the case of species of this group which occur on both sides of the island, they are commoner (occur in more quadrats) on the sheltered eastern side.

2. A greater abundance of the wood-margin scrub species, Euonymus europaeus, Alnus glutinosa, and Viburnum opulus is found on the sheltered side.

3. Much richer woodland flora occurs on the exposed side; even in the case of woodland species also occurring on the eastern side, they are almost all commonest on the western side. It is noteworthy that Fagus, Alnus and Acer, which occur on the eastern side, are largely replaced by Fraxinus and Quercus on the western side.

The species lists suggest that conditions on the eastern side of the island are more eutrophic. As the eastern side is an area of sedimentation, this is not surprising: the large number of damp grassland species, and the scrub species, grow on an area of mainly sediment, much of which is inundated during Winter. Areas such as this tend to be eutrophic, due to the mulch of sediment which they receive each year. No such sedimentary area exists on the exposed side, which is rather an area of erosion, and is rocky rather than silty. The presence there of a few species generally indicative of acid soils (Pteridium, Oxalis and Solidago, see Colgan, 1904) more abundantly than on the east side may in part be due to the effects of leaching of the soil, causing a reduction of the levels of calcium carbonate.

The cause of the very much richer woodland flora in the west (exposed) side is clearly not a simple one and probably involves several factors. Beach and Sycamore, both alien species, may indicate some kind of distrubance of the eastern woodland in the past. Beech is absent from the west, and Sycamore is rarer there. The composition of the western woodland is then, more typical of native woodland than that of the east.

Among the factors producing the floristic differences between the ground floras of the two sides of the island, it is suggested that the following may be important:-

i) The periodic flooding of the low, marly areas in the east, which may reduce the diversity of the woodland flora in marginal woodland close to the lake.

ii) Wind exposure on the west side may be the cause of the more open woodland which occurs there, permitting a greater penetration of light to the ground.

Thornberry,
Kilgobbin,
CO. DUBLIN.

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For anyone interested in the relationships between climatic factors and living organisms, the following are recommended:-

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ATHLONE FIELD MEETING: COMPARISON OF GRAZED AND UNGRAZED TRANSECTS ON HARE ISLAND

T. Curtis

Along two transects, parallel to each other, on the South western side of the island, releves were taken using the Braun-Blanquet method of estimation of percentage cover. Four zones were delimited in the field and these and the number of releves taken in each is shown in Table 1.

Table 1 :

Grazed	Zone	No. of Releves	Size of Sample Plot. Metres	Distance from Water
1	Waters edge	1	1 X 1	1 metre.
11	Littoral	2	1 X 1	2 "
			2 X 2	3 "
111	Grassland	3	2 X 2	5 "
			2 X 2	7 "
			5 X 5	12 "
1V	Woodland	1	10 X 10	36 "
Ungrazed				
1	Waters edge	1	1 X 1	1 "
11	Littoral	1	1 X 1	4 "
111	Scrub	1	5 X 5	8 "
1V	Woodland	1	10 X 10	30 "

In addition, total cover and percentage cover of each layer, was estimated. The two transects lay a distance of 7 metres from each other and were separated by a wall which was 1.5 metres in height. It was necessary to take more than one releve in the Littoral and Grassland zones of the grazed

transect as this held a rich and diverse flora which varied in content as one drew further away from the water's edge.

Results:

Table 11 : Grazed Transect.

Total No. Species	Total spp. per Zone	No. spp. not in ungrazed	% of total flora not in ungrazed
86	Z1 3 Z11 26 Z111 30 Z1V 27	43	50%

Table 11 : Ungrazed Transect

51	Z1 3 Z11 14 Z111 12 Z1V 22	8	17.7%

Fourty three species were common to both transects. Only 8 additional species were found in the ungrazed area whilst in the grazed transect 43 additional species were noted. An analysis of the similarities and differences in species type and number, in each Zone, showed the following:-

Table 111

	GRAZED (G)				UNGRAZED (U)			
Zones	1	11	111	1V	1	11	111	1V
Nos. different spp.	1	13	20	9	1	1	2	4

Zone 1 Water's Edge. Tow species in common. Mentha aquatica and Lythrum salicaria. Littorella uniflora in G. and Eupatorium cannabinum in U.

Zone 11. Littoral. Marked differences in species numbers in this zone. Centaurea nigra the only different species in U. Of the 13 species in G. 2 were shrubs Salix atrocinerea and Rosa rubiginosa, and the remainder were herbs which commonly occur in grazed areas, for example, Ranunculus flammula, Potentilla anserina, Rhinanthus minor, Prunella vulgaris, and Senecio jacobea. Thus greater species diversity in this grazed zone than in corresponding ungrazed one.

Zone 111 Grassland/Scrub. Most of the species common to both types of zone were woody species though they reached their highest cover values in U. 20 species occur in G. and not in U. 8 of these were grass species including Festuca arundinacea, Sieglingia decumbens, Poa pratensis, Festuca rubra, and Briza media. This zone in G. was delimited as grassland since grasses were the dominant species and contributed to most of the cover. In addition the following occured Potentilla erecta, Daucus carota, and the mosses Rhytidiadelphus triquetrus, and Pseudoscleropodium purum, all of these species being able to sustain grazing pressures.

The corresponding zone in U was designated as Scrub and the dominants were Birch, Betula pubescens, Ash, Fraxinus excelsior, and Viburnum opulus. The two species found only in this zone were Rubus saxatilis (Cover value 3) and Thalictrum minus. Other scrub species included Spindle, Euonymus eropaeus, Hazel, Corylus avellana, and Hawthorn, Crataegus monogyna. In all shrub layer cover was 5% in G, and 80% in U. (See Table 1V)

Zone 1V Woodland. The species common to both types of zone included Quercus robur, Oak, in the tree layer, Hazel and Holly in shrub layer, and Oxalis acetosella, Endymion nonscriptus, Holcus lanatus, and Pteridium aquilinum, in the field layer. in U there was a marked shrub layer up to 3m. in height and regeneration of tree and shrub species was apparent, mostly of Oak and Hazel. Of the four species which did not occur in the corresponding zone in G, two were tree species; Beech and Sycamore, one was herbaceous; Solidago vigaurea and the other was a bryophyte, Thamnium alopercurum.

9 extra species were recorded in G. and all of these were either herbs or bryophytes. These included Poa trivialis, Lonicera periclymenum, Glenchoma hederacea, and theBryophytes, Hypnum cupressiforme, Atrichum undulatum, and Rhytidiadelphus loreus. The percentage cover of the Shrub layer was estimated at 5% as against 40% for the corresponding zone in U.

Table 1V Table of Percentage Cover for each vegetation layer in each Zone.

Grazed	Moss	Herb	Dwarf Shrub	Shrub	Tree	Total	
Z1	-	+-5	-	-	-	+-5	
Z11	+	30	-	-	-	30	Average
Z111	16	95	3	5	-	119	Average
Z1V	10	70	5	5	25	115	
Ungrazed							
Z1	-	+-5	-	-	-	+-5	
Z11	5	30	+	-	-	30	
Z111	30	60	40	80	-	210	
Z1V	10	80	50	40	10	190	

From the above table it will be apparent that the total cover values were greater in the ungrazed transect than in the grazed one. However herbs predominate in GZ111 where grass species contribute to most of the cover. Shrub values are very low here, no doubt due to grazing whilst in the corresponding U zone, these values are high, due to the absence of grazing. Also, in the woodland zone in G, cover values for shrubs are low whilst in U the saplings of Quercus, and Corylus have contributed towards a high value. No tree seedlings or saplings were noted in G.

Conclusions:

Greater species diversity was noted along a transect in an area subject to grazing. The greatest number of species were

found in the Littoral and Grassland Zones. Those species which were found only along the grazed transect, in the Littoral are, those which commonly occur in grazed areas. The species in the grassland were mainly grasses and shrubs, the former group contributing to most of the cover, as these are best able to withstand grazing pressure. Though the shrub species noted here were the same as the species found in the ungrazed area, they were widely scattered along the transect and contributed little to the cover. Shrubs species in the seedling stages are known to be unable to withstand grazing and this would account for their rarity along the grazed transect. In the corresponding zone in the ungrazed area, dwarf shrubs and shrubs contributed to most of the cover and a dense scrub layer was noted. Also in the woodland zone, regeneration of tree and shrub species was apparent on the ungrazed transect whilst in the corresponding grazed zone, no regeneration was taking place and shrub cover values were very low.

In discussing the effects of grazing on the distribution of woodland, Praeger(1934), gives a list of 29 species from an average low-level old pasture, on neutral soil, at Dunlavin, Co. Wicklow. 11 of the species he mentions occured along the grazed transect at Hare Island and are characteristic pasture species. He continues by stating "that even leaving out of account the fact that much of the present grassland was wood, the influence of grazing animals is still profound on the richer soils tending to produce a uniform and limited flora, of little interest to the botanist". However, though many rare species may be absent from such areas, grazed areas would appear to hold a more diverse flora than areas not subject to grazing. Nonetheless, grazing still exerts profound effects on woodland and this is borne out by Praeger's observation, (1901), that even in wild districts like Connemara, no native trees are to be seen for miles, save on islands in lakes, where one finds an abundant growth of native woodland including Holly, Birch, Oak and Yew.

Thus on Hare Island, though species diversity was greatest in the grazed area, regeneration of tree and shrub species was being prevented there, so it must be assumed that ultimately the woodland would suffer.

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ATHLONE FIELD MEETING: SPECIES LIST OF THE PTERIDIOPHYTA, GYMNOSPERMAE AND ANGIOPERMAE.

HARE ISLAND. LOUGH REE, JUNE 1976.

T. Curtis

Nomenclature follows Census Catalogue of the Flora of Ireland by Scannell M.J.P. and Synnott D.M., Dublin, The Stationery Office, 1972.

PTERIDOPHYTA

Equisetum palustre. L.
E. arvense. L.

Pteridium aquilinus. (L.) Kuhn.
Asplenium adiantum-nigrum L.
A. trichomanes L.
A. ruta-muraria L.
Ceterach officinarum DC.
Phyllitis scolopendrium (L.) Newman.
Athyrium filix-femina (L.) Roth.
Dryopteris filix-mas (L.) Schott
D. borreri Newman
D. dilitata (Hoffm.) A.Gray.
Polypodium vulgare Agg.L.

GYMNOSPERMAE

Taxus baccata L.

ANGIOSPERMAE

Salix atrocinerea Brot.
S. caprea. L.
Populus nigra L.
Betula pubescens.Ehrh.
Alnus glutinosa (L.)Gaertner.
Corylus avellana L.
Fagus sylvatica L.
Quercus robur L.
Q. robur X petraea
Ulmus procera Salisb.
Urtica dioica L.
Polygonum minus Hudson.
Rumex acetosa L.
R. sanguineus L.
R. obtusifolius L.
Chenopodium album.L.
Moehringia trinervia (L.) Clairv.
Stellaria media (L.) Vill.
S. graminea L.
Cerastium fontanum Baumg.
C. glomeratum Thuill.
Caltha palustris L.
Anemone nemorosa L.
Clematis vitalba L.
Ranunculus repens L.
R. acris L.
R. flammula L.
Thalictrum minus L.
Fumaria bastardii Boreau.
Nasturtium microphyllum (Boenn) Richenb.
Cardamine pratensis L.
C. flexuosa With.
Capsella bursa-pastoris (L.) Medicus.
Parnassia palustris L.
Filipendula ulmaria (L.) Maxim.

Rubus saxatilis L.
R. fruticosus agg.
Rosa pimpinellifolia L.
R. canina L.
R. rubiginosa L.
Geum urbanum L.
Potentilla anserina L.
P. erecta (L.) Rauscel.
P. sterilis (L.) Garcke.
Fragaria vesca L.
Aphanes arvensis L.
Malus sylvestris Miller.
Sorbus aucuparia L.
S. hibernica E.F. Warburg.
Crataegus monogyna Jacq.
Prunus spinosa L.
P. laurocerasus L.
Vicia cracca L.
V. sepium L.
Lathyrus pratensis L.
Trifolium repens L.
T. pratensis L.
Lotus corniculatus L.
Oxalis acetosella L.
Geranium molle L.
G. dissectum L.
G. lucidum L.
G. robertianum L.
Linum catharticum L.
Euphorbia heliscopia L.
Acer psedoplatanus L.
Aesculus hippocastanum L.
Ilex aquifolium L.
Euonymus europaeus L.
Rhamnus catharticus L.
Hypericum androsaemum L.
H. pulchrum L.
H. tetrapterum Fries.

Viola canina L.
V. reichenbachiana Jordan ex Boreau.
V. riviniana Reichenb.
Lythrum salicaria L.
Circaea lutetiana L.
Epilobium hirsutum L.
E. montanum L.
Hippuris vulgaris L.
Hedera helix L.
Hydrocotyle vulgaris L.
Sanicula europea L.
Anthriscus sylvestris (L.) Hoffm.
Conopodium majus (Gouan) Loret and Barrandon.
Aegopodium podagraria L.
Aethusa cynapium L.
Apium nodiflorum (L.) Lag.
Angelica sylvestris L.
Heracleum sphondylium L.
Daucus carota L.
Lysimachia vulgaris L.
L. nemorum L.
Primula vulgaris Huds.
Samolus valerandi L.
Fraxinus excelsior L.
Ligustrum vulgare L.
Centaurium erythraea Rafn.
Blackstonia perfoliata (L.) Huds.
Galium odoratum (L.) Scop.
G. boreale L.
G. verum L.
G. saxatile L.
G. palustre L.
G. aparine L.
Calystegia sepium (L.) R.Br.
Myosotis palustris (L.) Hill.
M. arvensis. (L.) Hill.
Teucrium scordium L.
Ajuga reptans L.
Mentha aquatica L.
Lycopus europaeus L.
Glechoma hederacea L.
Stachys sylvatica L.
Prunella vulgaris L.
Scrophularia nodosa L.
Cymbalaria muralis Gaertn., May and Scherb.
Veronica scutellata L.
V. officinalis L.
V. montana L.
V. chamaedrys L.
V. arvensis L.
Pedicularis sylvatica L.
Euphrasia officinalis agg.
Rhinathus minor L.
Plantago major L.
P. lanceolata L.
Littorella uniflora (L.) Aschers
Lonicera periclymenum L.
Symphoricarpos rivularis Suskd.
Viburnum opulus L.
Sambucus nigra L.
Succisa pratensis Moench.
Campanula rotundifolia L.
Eupatorium cannabinum L.
Solidago vigaurea L.
Pulicaria dysenterica (L.) Bernh.
Achillea millefolium L.
A. ptarmica L.
Leucanthemum vulgare Lam.
Senecio jacobea L.

S. aquaticus Hill.
Arctium minus Bernh.
Cirsium vulgare (Savi) Ten.
C. palustre (L.) Scop.
C. arvense (L.) scop.
C. dissectum (L.) Hill.
Centaurea nigra L.
Carlina vulgaris L.
Hypochoeris radicata L.
Leontodon autumnalis L.
Sonchus arvensis L.
S. oleraceus L.
S. asper (L.) Hill.
Pilosella officinarum C.H. and F.W. Schultz.
Lapsana communis L.
Taraxacum officinale Weber.
Crepis capillaris (L.) Wallr.

Echinodorus ranunculoides (L.) Engelm.
Scilla non-scripta (L.) Hoff and Limk.
Juncus acutiflorus Ehrh. ex Hoffm.
J. articulatus L.
J. bufonius L.
Luzula sylvatica (Huds) Gaudin.
L. campestria (L.) DC.
L. multiflora (Retz.) Lejeune.
Cynosurus cristatus L.
Briza media L.
Dactylis glomerata L.
Poa annua L.
P. pratensis L.
P. trivialis L.
Festuca pratensis Huds.
F. arundinacea Schreb.
F. rubra L.
F. ovina. L.
Sieglingia decumbens (L.) Bernh.

Glyceria fluitans (L.) R.Br.
Bromus ramosus Huds.
B. hordeaceus L.
Brachypodium sylvaticum (Huds) Beauv.
Agropyron repens (L.) Beauv.
Arrhenatherum elatius Beauv. ex J. and C. Presl
Helicotrichon pubescens (Huds) Pilg.
Holcus lanatus L.
Agrostis tenuis Sibth.
A. stolonifera L.
Molinia caerulea (L.) Moench.
Phalaris arundinacea L.
Anthoxanthum odoratum L.
Arum maculatum L.
Scirpus lacustris L.
Eleocharis quinqueflora (F.X. Hartmann) Schwarz.
Schoenus nigricans L.
Carex lepidocarpa Kausch.
C. serotina Maret.
C. sylvatica Huds.
C. panicea L.
C. flacca Schreb.
C. hirta L.
C. caryophllea Latourr.
C. nigra (L.) Reichard.
C. paniculata L.
C. disticha Huds.
C. echinata Murr.
C. pulicaris L.
Cephalanthera longifolia (L.) Fritsch.
Listera ovata (L.) R.Br.
Plantanthera bifolia (L.) Rich.
Dactylorhiza fuchsii (Druce) Soo.
D. incarnata (L.) Soo.

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ATHLONE FIELD MEETING: PRELIMINARY NOTES ON THE AQUATIC INVERTEBRATE FAUNA OF HARE ISLAND AND ENVIRONS

J.P. O'Connor and M.A. Norton

Introduction

While aquatic invertebrates have been previously collected in the Athlone district (see King, 1889; King and Halbert, 1910), the Irish Biogeographical Society's visit to Hare Island and environs has not only confirmed many existing records but also provided new and interesting data. The present paper summarises the preliminary results and presents tentative conclusions. It is hoped to publish a more detailed and comprehensive faunal account at a later date.

Materials and Methods

At Hare Island benthic invertebrates were collected semi-quantitatively on a partially exposed rocky shore-line and in a reed-bed. At each site, samples were taken for three minutes using a kick method to provide a basis for comparative analysis. In addition, qualitative collections of both imagines and immature stages were made throughout the island and Lough Coosan (N 055 445).

Results

To date, a total of 47 species have been identified and are listed (Table 1). Where relevant, comments on distribution and abundance are included. In addition to these tabulated results, two adults of an unusual species of Sialis were collected by sweeping waterside vegetation and strange caddis-fly larvae (probably Apatania sp.) were also collected. The latter were widely distributed and occurred on rocks. The specimens were very small.

Discussion

The present survey has yielded important information on certain species. The more notable records will now be reviewed. Both the stonefly, Leuctra nigra (Olivier), and the water-cricket Velia saulii Tamanini, appear to be species new to Ireland. Unfortunately the occurrence of L. nigra is only based on nymphal material and imaginal confirmation will be required. In the past, nymphal misidentifications of this species have led to misleading conclusions (Hynes, 1967).

Halbert (1935) recorded V. currens Fabr. from Ireland but Brown (1951) suggests that previous determinations are unreliable, that this particular water-cricket does not occur in the British Isles and that instead two other species are represented viz. V. caprai Tamanini and V. saulii (Brown, loc.cit.; 1954; Macan, 1965). While Brown mentions that the former is found in this country, to date no Irish record of V. saulii has been traced in the literature. The species has also been obtained in two other Irish counties (O'Connor and Norton, unpublished data).

The joint capture of unusual Sialis adults by M.C.D. Speight and the authors is of great interest. Definite determination proved impossible using Kimmins (1962). However P.C. Barnard, British Museum (Natural History) has recently indicated that the Hare Island material probably belongs to a new Britannic species viz. S. nigripes Pictet (Speight, pers. comm.). He is, as a consequence, revising the key to Sialis spp. known in the British Isles, because this record renders all previous determinations unreliable (Barnard, in press).

Leston (1958) states that the alkaline loughs of the Shannon area support the corixid, Sigara fallenoidea (Hungerford); a bug absent from Britain but found in Canada and rarely in Northern Scandanavia. The L. Ree record collaborates this distributional pattern. Siphlonurus linneanus Eaton, a may fly known from Ireland and Scotland, has also a preference for alkaline waters (Harris, 1956; Macan, 1970). While undoubtedly commoner in Ireland than elsewhere, it is seldom encountered (Macan, loc. cit.).

In Ireland, the caddisfly, Limnephilus fuscinervis (Zetterstedt) was originally only known from Mayo and Monaghan (Morton, 1909, 1916). Crichton (1971) mentions that there is no recent distributional information available but O'Connor (1975) has since collected imagines in counties Cavan, Clare and Offaly. The L. Ree locality is therefore an important new vice-county record.

While three Apatania species are considered to occur in Ireland (O'Connor, loc.cit.) the Hare Island larvae appear to be A. wallengreni McLachlan. At the moment, this caddisfly has doubtful Irish status since the record is based on only a few probable females (King and Halbert, 1910). In the spring it is hoped to revisit the area to collect adults and confirm the identification. In addition, attempts will be made to capture the other controversial species.

The common occurrence of the mayfly, Ephemerella ignita (Poda) and the beetle, Oulimnius tuberculatus (Muller) in the littoral region is very interesting. Harris (1956) suggests that the former seldom occurs in lakes or other still waters, while Holland (1972) considers the latter to be uncommon on stony lake shores. Both species are normally thought to be lotic forms.

Although the aquatic fauna of the Athlone area is comparatively well-known, it is revealing that such a short visit should accumulate so many new records. When it is realised that many species have short and restricted flight periods, it is evident that even the most mundane areas have a potential for greatly increasing, inter alia, out distributional knowledge of Irish aquatic organisms.

Acknowledgements

We wish to thank Dr. E.J. Wise, University College Dublin, for confirming our determinations of L. nigra, S. linneanus and V. saulii.

66 Navan Rd., Dublin 7. (J.P. O'C.)
Grove Rd., Finglas, Dublin 11. (M.A.N.)

TABLE 1: A list of aquatic invertebrates collected from Hare Island and L. Coosan, June 1976

KEY : common - present in many localities
abundant - present in large numbers

Unless otherwise stated, descriptive comments refer only to Hare Island.

Phylum Platyhelminthes
Order TRICLADIDA (flatworms)
Dendrocoelum lacteum (Mull): common
Dugesia polychroa (Schmidt): common

Phylum Annelida
Order HIRUDINEA (leeches)
Dina lineata (Mull): individuals taken at both comparative sites
Erpobdella octoculata(L.): individuals taken at both comparative sites
Helobdella stagnalis (L.): individuals taken at both comparative sites

Phylum Arthropoda
Class Crustacea
Order ISOPODA (water slaters)
Asellus aquaticus (L.): common and abundant
Order AMPHIPODA (water shrimps)
Gammarus duebeni Lilljeborg: common and abundant
Class insecta
Order PLECOPTERA (stoneflies)
Diura bicaudata (L.): nymphs common
Leuctra nigra (Oliv.): Nymphs common and fairly abundant
Nemoura cinerea (Retz.): Imagines common and abundant.
Order EPHEMEROPTERA (mayflies)
Caenis moesta Bengtsson: Nymphs very abundant on partially exposed shore and in reed bed
Ephemera danica Müll: imagines and subimagines common and fairly abundant, nymphs collected at both comparative sites
Ephemerella ignita (Poda): imagines, subimagines and nymphs very common and abundant
Heptagenia sulphurea (Müll): one nymph collected on an exposed rocky shore
Siphlonurus linneanus Eaton: one nymph taken in the boat channel, L. Coosan
Order ODONATA (dragon- and damsel-flies)
Enallagma cyathigerum (Charp.): newly emerged adults common on Hare Is., nymphs abundant in boat channel, L. Coosan
Ischnura elegans: male on Hare Island. 2 nymphs in boat channel, L. Coosan
Order HEMIPTERA (bugs)
Gerris lacustris (L.): male caught at boat channel L. Coosan
Hydrometra stagnorum (L.): male identified

Micronecta poweri (D. and S.): male identified from reed bed

Sigara fallenoidea (Hungerford): 2 males, 1 female collected in reed bed.

Velia saulii Tamanini: common and fairly abundant

Order TRICHOPTERA (caddisflies)

Anaholia nervosa (Curt.): a single larva obtained in the boat channel, L. Coosan

Athripsodes aterrimus (Steph.): adults common and abundant at both Hare Is and L. Coosan

A. cinereus (Curt.): adults common and abundant

A. dissimilis (Steph.): adults common and abundant

Goera pilosa (Fab.): male captured, larvae taken in reed bed

Lepidostoma hirtum (Fab.): adults common and abundant larvae on partially exposed rocky shore-line

Limnephilus auricula (Curt.): larvae occured at both comparative sites, male pupa also determined

L. fuscinervis (Zett.): female captured beside boat channel, L. Coosan

L. lunatus (Curt.): adults, pupae and larvae common and fairly abundant

Metalype fragilis (Pict.): larvae generally distributed

Mystacides azurea (L.): larvae at both comparative sites, adults common and abundant

M. longicornis (L.): as M. azurea but pupae (males and females) also obtained

Polycentropus flavomaculatus (Pict.): adults common, larvae present at partially exposed sampling site

Sericostoma personatum (Spence): adults common and abundant larvae and a pupa (male) were collected at the comparative stations

Tinodes waeneri (L.): larvae generally distributed

Order COLEOPTERA (beetles)

Gyrinus marinus Gyll.: adults fairly abundant at sheltered localities

Hydroporus tessellatus (Drap.): adults recorded from the reed-bed and partially exposed shore

Orectochilus villosus (Müll): adults collected on the exposed shore

Oulimnius tuberculatus (Müll): adults and larvae very common and abundant

Phylum Mollusca

Class Gastropoda (snails)

Bithynia tentaculata (L.): abundant in reed-bed but also obtained elsewhere

Lymnaea peregra (Müll.): very common and abundant

L. stagnalis (L.): an empty shell taken in the reed-bed

Planorbis carinatus (Müll.): an empty shell taken in the reed-bed
Potamopyrgus jenkinsi (Smith): empty shells determined
Valvata piscinalis (Müll.): found at both comparative areas.

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ATHLONE FIELD MEETING: WOODLICE IN THE LOUGH REE DISTRICT.

D. Doogue.

Little information appears in the literature concerning the distribution of woodlice in Counties Rocommon (H.25) and Westmeath (H.23). Pack-Beresford and Foster (1911) record the presence of four common and widespread species in both counties, viz. - Trichoniscus pusillus agg., Philoscia muscorum, Porcellio scaber and Oniscus asellus. In the same paper they additionally record the pill-bug Armadillidium vulgare from Westmeath and A. Pulchellum from Kiltoom, Co. Roscommon, where it was collected by A.W. Stelfox. Paul T. Harding (1969) recorded A. vulgare from Co. Roscommon, where he had found it the previous year.

During the I.B.S. excursion to Athlone in 1976, several previously unexamined 10km. squares in the vicinity of L. Ree were examined. Recording work was undertaken as part of an on-going project to map the distribution of Irish woodlice.

Eight sites were visited and species lists and habitat data compiled for each locality. With the exception of A. pulchellum, all the above mentioned species were encountered in the course of the survey. Three additional species were found, viz. - Androniscus dentiger, Haplothalmus mengei and Trichoniscus pygmaeus. This total of eight species represents approximately 30% of the Irish woodlice fauna.

The following sites were examined:-

Site 1. Roadside at Cornafulla on the Athlone/Galway road. Under human rubbish. M.99 36. Roscommon

Site 2. Sandpit in military grounds, Carnagh Bay. Under stones in lightly grazed grassland. M.99 52 Roscommon.

Site 3. Lake shore at Carnagh Bay. Under dead wood. M.99 52 Roscommon.

Site 4. 1 mile NW of Carnagh townland. Under stones and in soil in calcareous grassland with scrub. M 98 52

Site 5. Doyles Bridge, 2 miles S.W. of Athlone. Under stones in sandpit. N 00 38. Roscommon.

Site 6. Royal Hotel, Athlone. Builders rubble. N 02 41. Westmeath.

Site 7. Behind Hodson Bay filling station. Under stones in sandpit. N 01 46. Roscommon.

Site 8. Hare Island. Under stones on lakeshore. N 04 47. Westmeath.

The following species were encountered:-

(Arranged in alphabetical order; nomenclature following Sutton t al, 1972)

Androniscus dentiger Site 6.
In Ireland this species appears to be mainly confined to gardens, where it is to be found under stones and boards with damp undersides.

Armadillidium vulgare. Sites 1, 2, 4, 5, 7.
Most abundant in the S.E. of Ireland this species was found to be both widespread and exceedingly common in the study area, especially in the sandpits along the S.W. corner of Lough Ree.

Haplothalmus mengei. Site 4.
Although often found in gardens, this small species (under 4 mms.) is often found in soil and under stones in slightly moist lime-rich grassland. It was in a habitat such as this, rich in flowering plants, that the species was encountered N.W. of Carnagh.

Oniscus asellus. Sites 1, 2, 3, 4, 5, 6, 7, 8.

Philoscia muscorum. Sites 1, 3, 4, 5, 7.

Porcellio scaber. Sites 1, 2, 4, 5, 6, 7, 8.
These three species were found to be exceedingly common in a wide variety of habitats, as would seem to be the case over much of Ireland.

Trichoniscus pusillus agg. Sites 1, 4, 6, 7, 8.
Common under stones and logs where the soil was sufficiently damp.

Trichoniscus pygmaeus. Sites 1, 3, 4.
This small and inconspicuous species may well be widespread in the district. Resembling a tiny T. pusillus, it may well have been overlooked by previous workers.

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ATHLONE FIELD MEETING: INSECTS COLLECTED ON AND NEAR THE SHORES OF LOUGH REE.

M.C.D. Speight.

Previously published records of non-aquatic insects from the L.Ree area are listed in Appendix 1. There may well be further records published in journals other than those I have examined. Appendix 2 is a list of the species collected during the course of the I.B.S. field meeting.

My collecting activities were conducted primarily with a strong kite net, which makes possible direct collecting from flower-heads in traditional "butterfly-collector" style; sweeping of low growing vegetation (other than really spiny or woody plants like bramble or blackthorn) and beating of tree foliage. In addition a fairly exhaustive (and exhausting!) stone-turning exercise was carried out on the shores of L. Ree at Coosan Pt. and on the Southern shore of Hare Island and a line of pitfall traps was put down in a field by Coosan Lake. These latter two activities were aimed at obtaining ground-beetle records. Finally, a malaise trap (a rather unlikely construction reminiscent of a ridge-pole tent, but made of nylon net-curtain material and in design cunningly contriving to coax the insects which fly into it to accumulate at its highest point, where they fall into a killing bottle) was erected across a shore-line path on Hare island, among young Salix bushes.

Sweeping, beating and swiping was curtailed on Hare Island, where I was expecting it to produce the most interesting results, by drizzle. The wet vegetation reduced my catch to sodden, staggering, indeterminate, black blobs, in danger of death more by drowning than by the cyanide bottle! Indeed, I was quite unable to do justice to any part of the insect fauna of Hare Island even collecting selectively as I was. From the number of interesting species which did turn up despite this I am certain that a return visit under better

conditions would produce dramatic results. The insects collected include both classical fenland species and local deciduous woodland animals, a rather curious mixture. Collections made at the other locations round L. Ree also contain local wetland species: the Shannon system would evidently prove rich in species if surveyed, including many species additional to those at present known in Ireland. The Hare Island woodland species suggest there has been a continuity of woodland cover there for some considerable time.

With so few species recorded (total list of 80 spp.) I think it would not be very meaningful to compare the faunas of the different locations at which collecting was carried out. Some of the individual species collected do demand specific mention however, and the ground beetle (Carabidae) are sufficiently numerous for some comment to be made about them as a group.

Notes on individual species.

Sialis nigripes Pictet:
in addition to what Jim O'Connor has said of this species in his article, there are a few points I would wish to make. When I sent specimens of this alder-fly to Peter Barnard (Brit. Mus.) I was under the impression that they were S. fuliginosa, which is known in Great Britain but absent here. My conclusion was based on available keys, which patently do not work! Mr. Barnard has established that the three British Isles species of Sialis can only safely be determined on genitalic characters. Previous authors had in the British Isles ignored genitalic characters in this genus and so had overlooked the presence of S. nigripes entirely. Mr. Barnard's paper (Barnard, in press) figures the genitalia of the three species and includes a key.

Rhagio annulatus DeG.: the solitary female of this species, collected on Hare Island, represents a most unlikely addition to the Irish fauna. There are but two previous records of this fly from the British Isles, both of them of single specimens collected in S. England, though I understand there is also a recent, unpublished record from S.E. England (Alan Stubbs, Pers. comm.). Rhagio species are quite large flies, brightly coloured and by no means retiring in their habits, so R. annulatus is unlikely to prove common with more intensive collecting here - if it were widely distributed it should have been come across before now, especially since the Irish Rhagionids have recently been monographed: see Chandler (1975).

Chlaenius tristis (Schall.): the record of this ground-beetle is most useful, in that it establishes beyond doubt that this species is extant in Ireland. Lindroth (1974) suggests C. tristis is extinct in the British Isles and it may well have disappeared from Great Britain (see Speight, in press). Like other fenland species, this beetle has suffered greatly as a result of drainage operations aimed at improvement of agricultural land.

Salda morio Zett and S. muelleri (Gmel.):
these shore bugs are known in Ireland only from doubtful 19th centruy records. They are both species which occur on well-vegetated ground near water, but usually away from the actual water-edge. They are both of them Northern European species.

Tetanocera freyi Stack.:
this snail-killing fly was described some 25 years ago It is so far known definitely from but two localities in the British Isles, the Norfolk Broads (see Speight, 1970) and Killarney (see Chandler, 1972). I have discussed the significance of the Hare Island record elsewhere, in the context of other Sciomyzid records (see Speight and Nash, in press).

Macrophya punctum-album (L.):
most saw-flies are rather unobtrusive creatures, only met with in numbers by sweeping vegetation in the evening, but M. punctum-album runs and flies about like a hunting ichneumon, most conspicuous in its red and white colours. Its larvae feed on ash and wild privet, so it may well be widely distributed in Ireland and indigenous, despite Benson's (1952) suggestion that the species is introduced here. It has till now, been recorded from Ireland only in Co. Dublin.

The Ground Beetles (Carabidae).

Fifteen ground-beetle species were recorded during the course of this field-meeting. Some of them were collected by stone-turning, others by pitfall-trapping. Only two species, Elaphrus cupreus and Pterostichis nigrita, were collected both directly and in pitfalls, demonstrating quite neatly that different collecting methods can sample very different components of a fauna! In this context it is noteworthy that neither Chlaenius species appeared in the pitfalls - these secretive beetles rarely turn up in numbers, usually being found as solitary specimens. Nearly all the species recorded are characteristic of damp ground, most of them normally being found only a few feet from water. Some, like Agonum marginatum, A. muelleri and A. viduum, are species of thickly vegetated water margins. Others such as Pelophila borealis and Agonum moestum, are animals of bare, stony shores. As its name suggests, P. borealis is a Northern species. It is locally common in the West of Ireland, but elsewhere in the British Isles is known only from four English counties and islands of the Scottish coast.

The results obtained from the pitfall traps, put down in a wet pasture on the shore of Coosan Lake, are represented in Fig. 1. The 1lb. jam-jar traps were dug in leaving their rims flush with the ground surface, along a line at right-angles to the lake margin, beginning at the lake edge. Three separate groups of traps were put down along this transect, as indicated in the diagram. Within each group the traps were laid at more or less regular intervals. Numbers

of specimens per species (of insect captured) are too few for deductions to be drawn from them, except perhaps to say the 24 house is not an adequate period within which to detect species' habitat preferences in this way! Even so, it is noticable that the only characteristically dry-ground species present, Pterostichus versicolor, turned up only along the highest and best-drained part of the trap-line, where the other, wetland species, were absent. Equally though, the histograms (see Fig.2) demonstrate that the wet, Schoenus-dominated hollow E-H seemed to have almost no wetland species either, nearly all of them occurring along the slope down to the actual water-line. I would interpret this as an indication of the relative abundance of food at the two locations, the lake-shore providing much the richer hunting ground for such predatory insects.

158 Barton Road East,
Dundrum.

Acknowledgements

I am grateful to Peter Barnard (Brit. Mus.) for information about his forthcoming paper on Sialis and for his determination of S. nigripes. David Hollis (Brit. Mus.) kindly enabled me to examine material of Rhagio annulatus from the BM collections, so that I might confirm the identity of the Hare Island specimen.

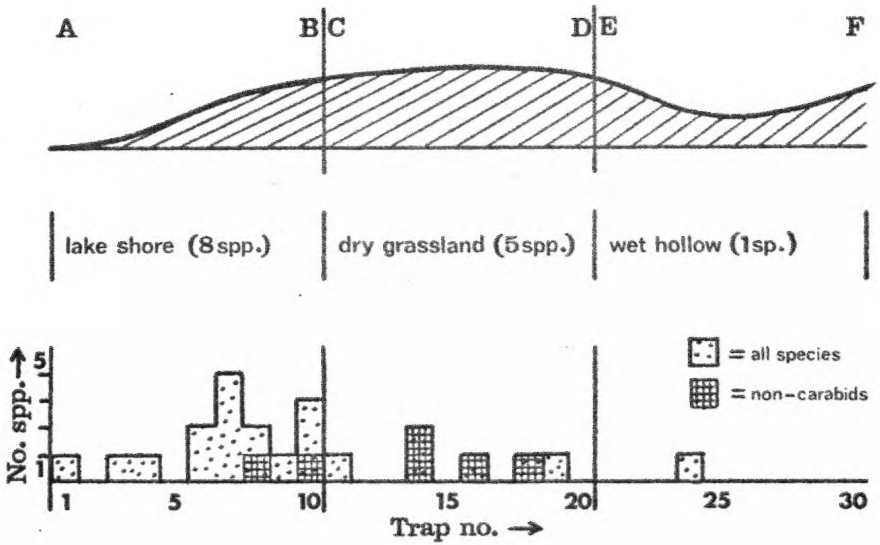

Fig. 1: The pitfall traps, their location and contents

The upper part of the figure shows a diagrammatic profile (not to scale) of the pasture by Coosan L., along the line of the pitfall transect. Points B and C are shown for convenience as co-incident, similarly points D and E. The line of traps was actually in three sections separated by gaps of about 100 yards, which occurred at B/C and D/E. The water-margin of the lake-shore was within one foot of point A.

The lower part of the figure shows the number of species of insect caught per trap. In the section A-B most insects caught were ground beetles (carabids); in the section C-D carabids were absent except from traps 11 and 19; E-F caught a solitary ground beetle, Pterostichus nigrita, in trap 24. P. versicolor occurred in traps 10, 11 and 19. The other carabids caught in the pitfalls have the symbol (p) after their names in appendix 2.

APPENDIX 1: Invertebrates from L. Ree islands and shore, recorded in other publications.

COLEOPTRA (from Halbert, 1900)

Anobiidae
Anobium striatum : Pl

Cantharidae
Telephorus thoracicus : Hl

Carabidae
Anchomenus albipes : Hl
A. marginatus : Hl
A. moestus : Hl
A. rufescens : Hl
Bembidion atrocoeruleum Hl
B. rufescens : Hl
Bradycellus distinctus : Hl
Chlaenius vestitus : Hl
Elaphrus cupreus : Hl
Harpalus rufibarbis : Hl
Pterostichus vernalis : Hl

Cerambycidae
Grammoptera ruficornis : Hl
Rhagium inquisitor : Hl

Chrysomelidae
Chrysomela hyperici : Pl
Galerucella lineola : Hl
G. nymphaeae : Hl
G. tenella : Hl
Phyllodecta vitellinae : Hl

Coccinellidae
Halyzia conglobata : Pl

Curculionidae
Brachysomus echinatus : Hl
Miaris campanulae : Pl
Orchestes salicis : 1C
Phytosus balticus : 1C
Rhopalomesites terdyi : Hl
Sitones griseus : 1C

Dytiscidae
Coelambus 5-lineatus : Hl
Deronectes assimilis : Hl
D. depressus : Hl
Hydroporus lineatus : Hl
H. umbrosus : Hl

Elmidae
Elmis volkmari : Pl

Gyrinidae
Orectochilus villosus : Hl

Lucanidae
Sinodendron cylindricum : Hl

Nitidulidae
Eperea deleta : Pl

Staphylinidae
Aleochara obscurella : 1C
Bledius opacus : 1C
Gyrophaena laevipennis : Pl
Philonthus cephalotes : 1C
P. quisquilarius : Hl

EPHEMEROPTERA (from King & Halbert, 1910)

Baetidae
Centroptilum luteolum Mull.: CP, YP
Cloeon rufulum (Mull.): CP
C. simile Eaton: CP

Caenidae
Caenis dimidiata Steph.: CP
C. halterata (Fab.): CP

Ephemerellidae
Ephemerella ignita Poda: CP, Hl, YP

Heptagenidae
Ecdyurus venosus (Fab.): CP, Hl, Yp
Heptagenia sulphurea (Mull.): CP, YP

Siphlonuridae
Siphlurus lacustris Eaton: CP, YP

HYMENOPTERA (from Cuthbert, 1900)

Apidae
Psithyrus barbatellus K.: Hl

Colletidae
Prosopis hyalinata: Ql (record in Halbert, 1900)

Formicidae
Formica fusca Lat.: Hl, Ql
Myrmica ruginodis Nyl. : Hl
M. scabrinodis Nyl.: Hl

Halictidae
Halictus albipes K.: Hl
H. villosus K.: Hl
Sphecodes divisus K.: Hl
S. similis: Hl (record in Halbert, 1900)

NEUROPTERA (from King & Halbert, 1910)

Chrysopidae
Chrysopa alba (L.) : YP
C. flava (Scop.): CP
C. vittata Wesm.: YP

Coniopterygidae
Coniopteryx lactea Wesm.: CP,YP

Hemerobiidae
Haemerobius lutescens Fab.: CP
H. micans Oliv.: CP
H. subnebulosus Steph.: CP

ODONATA (from King & Halbert, 1910)

Coenagriidae
Enallagma cyanthigerum Charp.:

Ischnura elegans (v.d.L.): YP
Libellulidae
Sympetrum scoticum (Don.): YP
S. striolatum (Charp.): YP

PLECOPTERA (from King & Halbert, 1910)
Chloroperlidae
Isopteryx torrentium Pict.: CP
Nemouridae
Nemoura veriegata Oliv.: CP, YP

PSOCOPTERA (from King & Halbert, 1910)
Mesopsocidae
Mesopsocus unipunctatus (Mull.): CP, YP
Polypsocidae
Caecilius fuscopterus (Lat.): YP
Graphopsocus cruciatus (L.): CP
Stenopsocus immaculatus (Steph.): YP
Psocidae
Elipsocus hyalinus (Steph.): Hl
E. westwoodi Mel.: CP,YP
Psocus longicornis (Fab.): Hl, Yp
P. nebulosus Steph.: YP

TRICHOPTERA (from King & Halbert, 1910)
Glossosomatidae
Agapetus comatus (Pict.): CL
Hydroptilidae
Agrylea multipunctata Curt.: CL
Oxyethira costalis (Curt.): YP
Leptoceridae
Leptocerus albifrons (L.): CL, Hl, YP.
L. aterrimus Steph.: CL, YP
L. cinereus Curt.: YP
L. commutatus (Rostock): CL
L. disimilis Steph.: CL, YP
L. fulvus (Ramb.): CL, Hl, YP
L. senilis (Burm.): CL
Mystacides azurea (L.): CL
M. longicornis (L.): CL
Oecetus furva (Ramb.) : CL
O. lacustris (Pict.): CL, Hl, YP
O.ochracea (Curt.): CL,YP
Limnephilidae
Limnophilus affinis Curt.: CL, Hl, YP
L. griseus (L.): CL
L. hirsutus (Pict.): Cl
L. luridus Curt.: CL
L. lunatus Curt.: CL, YP
L. vittatus (Fab.): YP
Phrygaenidae
Phrygaena striata L.: YP
P. varia (Hagen): CL, YP
Polycentropidae
Cyrnus flavidus Mel.: CP
C. trimaculatus (Curt.): CL, YP
Holocentropus picicornis (Steph.): CL
Neureclipsis bimaculata (L.): CL
Polycentropus flavomaculatus (Pict.): CL, Hl, YP
Psychomyiidae
Lype fragilis (Pict.): CL, Hl, YP
Psychomia pusilla (Fab.): CL
Tinodes maculicornis (Pict.): CL
T. waeneri (L.): CP
Sericostomatidae
Goera pilosa (Fab.): CL, YP
Lepidostoma hirtum (Fab.): CL, YP
Sericostoma personatum (Spence) : Cl.

KEY

CL = Coosan Lake, N.0544 (Co. Westmeath)
Hl = Hare Island, N.0446 (Co. Westmeath)
IC = Inchcleraun Is., M.9969 (Co. Longford)
CP = Coosan Pt., N.0446 (Co. Westmeath)
Pl = Priest's Island, L. Ree (? grid ref. & Co.)
Ql = Quaker Is., L. Ree (? grid ref. & Co.)
YP = Yew Pt., N.0247 (Co. Roscommon)

N.B. The above records are presented here as they appeared in print originally. No attempt has been made to update nomenclature or confirm records.

APPENDIX 2: Insects collected 19-20th. June, 1976

COLEOPTERA

Carabidae

Agonum ruficornis (Goeze): H,S
A. marginatum (L.) : H
A. moestum (Duft.): H,S
A. muelleri (Herbst): C.1(p)
A. viduum (Panz.): C.1(p)
Bembidion unicolor Chaud: C.1(p)
Carabus granulatus L.: C.1(p)
+1 Chlaenius tristis (Schall.): C.1
1 C. vestitus (Payk.): H
Dyschirius globosus (Herbst): C.1(p)
Elaphrus cupreus Duft.: C.1(p), H
1 Pelophila borealis (Payk.): H
Pterostichus nigrita (Payk.): C.1(p), C.2,H
P. strenuus (Panz.): C.1(p)
P. versicolor (Sturm): C.1(p)

Cerambycidae

Grammoptera ruficornis (Fab.): H
1 Leiopus nebulosus (L.): H
Rhagium mordax (Deg.): H
Strangalia maculata (Poda): S

Chrysomelidae

Phyllodecta vitellinae L.: H

Elateridae

Athous haemorrhoidalis (Fab.): C.1

Silphidae

Phosphuga subrotundata Fab.: H

DIPTERA

Micropezidae

1 Calobata commutata Cz.: R

Otitidae

Herina frondescentiae (L.): C.1, H(m),R,S

Psilidae

Loxocera aristata Pz.: R

Rhagionidae

+1 Rhagio annulatus Deg.: H
R. scolopaceus (L.): H

Sciomyzidae

Hydromya dorsalis (Fab.): S
Knutsonia albiseta (Scop.): S
K. lineata Fal.: R
Pherbellia ventralis (Fal.): C.1
Pherbina coryleti (Scop.): C.1, H, R, S
Tetanocera arrogans (Mg.): S
T. ferruginea Fal.: H
1. T. freyi Stack.: H
T. unicolor Lw.: C.1

Stratiomyiidae

Chloromyia formosa (Scop.): C.2
Nemotelus nigrinus Fal.: C.1, R
Oxycera formosa Mg.: C.1
O. morrisii Curt.: H,R,S
1 Stratiomys furcata Fab.: R

Syrphidae

Cheilosia albitarsis Mg.: S
C. illustrata (Harr.): S
Chrysogaster hirtella Lw.: C.1
Chrysotoxum bicinctum (L.): S
Eristalis intricarius (L.): R
E. pertinax (Scop.): H
Helophilus pendulus (L.): S
Melanostoma scalare (Fab.): H(m),S
Myathropa florea Rond.: C.2
Platycheirus clypeatus (Mg.): C.1
Rhingia campestris Mg.: R,S
Syritta pipiens (L.): S
Volucella bombylans (L.): R
V. pellucens (L.) :H

Tabanidae

Chrysops relictus Mg.: R
Haematopota pluvialis (L.): S

HEMIPTERA

Cercopidae

Aphrophora alni (Fal.): H

Miridae

1 Miris Striatus (L.) : H

Pentatomidae

Troilus luridus (Fab.) nymphs: H

Saldidae

Chartoscirta cincta (H.-S.): H
Salda littoralis (L.): H
+1 S. morio Zett.: R
+1 S. muelleri (Gmel.): C.1

HYMENOPTERA

Apidae

Bombus hortorum (L.): S
B. jonellus (Kirby): C.1
B. pascuorum (Scop.): C.1, H,R,S
B. pratorum (L.): H

HYMENOPTERA (continued)
Apidae (Continued
Psithyrus bohemicus (Seidl.): C.2

Formicidae
Myrmica rubra (L.): C.1
M. scabrinodis Nyl.: C.1

Tenthredinidae
Empria tridens (Konow): H
1 Macrophya punctum-album (L.): S
Selandria serva (Fab.): R
Tenthredo acerrima Bens.: C.2, S
T. livida L.: H,S
T. moniliata Klug: R
T. temula Scop.: S
Tenthredopsis coqueberti (Klug): S

MEGALOPTERA
Sialidae
+1 Sialis nigripes Pict.: H

ORTHOPTERA
Tetrigidae
Tetrix subulata (L.): H,R,S

KEY

C.1 = wet pasture, edge L. Coosan; N.0445 (Co. Westmeath)
C.2 = meadows by L. Coosan N.0445 (Co. Westmeath)
H = stony shore & oak woods, Hare Is.; N.0446 (Co. Westmeath)
1 = species local or rare in Ireland
(m) = in malaise trap
(p) = in pitfall trap
R = lake-edge fen, Carnash Bay, L. Ree; M.9949 (Co. Roscommon)
S = scrub woods/lake shore, L. Ree; N.0055 (Co. Roscommon)
+ = species new to Ireland.

Nomenclature in list as follows:

COLEOPTERA: Carabidae, Lindroth (1974); Cerambycidae, Duffy (1952); Chrysomelidae Elateridae Silphidae, Joy (1932).
DIPTERA: Kloet & Hincks (1976)
HEMIPTERA & ORTHOPTERA: Kloet & Hincks (1964)
HYMENOPTERA: Apidae, Alford (1971); Formicidae, Bolton & Collingwood (1975): Tenthredinidae, Benson (1951-8)

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THE BALTINGLASS MEETING

3rd. July 1976.

T. Curtis and T. Harrington.

Introduction:

The purpose of this meeting was primarily to record the Angiosperms of this little-recorded area, as part of the on-going work on the flora of Co. Wicklow, by one of us. (T.C.) The flora of this area was first investigated by Hart in 1881 and subsequently by Brunker as part of his work on the Wicklow flora; most of the work done in the region was carried out in 1937. (Brunker 1950). Little or no work has been carried out since and it was for this reason that a field meeting took place to the area. One locality was chosen in each of the three 5km squares, for recording purposes, the locations of which are set out below.

Table 1

5km square	Locality	Total No. of Species recorded
S80/90	Lowtown Fen.	151
S85/85	Holdenstown Bog.	109
S85/90	Gravel spread at Tuckmill	70

Though the solid geology of the Baltinglass area consists of granite, Ordovician shales and grits, and mica schist, the soils consist mainly of calcareous glacial deposits brought by the Midlandian ice sheet, one lobe of which advanced across the Midlands from the north-west, depositing morainic material throughout the region. Thus the flora is mainly calcicole and kettle-holes occur sporadically amongst the morainic deposits with extensive fens and marshes occurring in the lower grounds. A detailed account of the vegetation of each of the above localities follows. The nomenclature of angiosperms and pteridophytes follows that of Scannell M.J.P. and Synnott D.M., Census Catalogue of the Flora of Ireland, 1972.

Locality 1. Lowtown Fen. S84/92

This fen is known locally as the Black Bog of Lowtown, and is an overgrown kettle hole (Brunker 1950). It lies a mile and a half to the south of the village of Grange Con (S84/95). Several attempts have been made to drain it and consequently the area is dissected by many drainage channels.

A concentric zonation of fen vegetation was observed, and four main vegetation zones were discerned.

Zone 1: Reedswamp
This zone encompasses the central area of the fen and is dominated by a dense stand of Phragmites australis. At the time of our visit the water-table was below the soil surface and this no doubt was due to the extremely dry weather prevailing at the time. Associated species in this zone were Potentilla palustris and Equisetum palustre.

Zone 11:
A narrow fringe of the sedges Carex paniculata and C. diandra occured outside Zone 1. Associated with these species were Caltha palustris and Mentha aquatica. On the northern side of the fen, Zone 11 is separated from Zone 111 by a drainage channel which contained Catabrosa aquatica, Glyceria fluitans and Rorippa nasturtium-aquaticum (agg).

Zone 111: Fen-meadow
This can be arbitrarily divided into a lower and upper part on the basis of increasing dominance of grasses and herbs, towards the outer margin of the meadow. This probably reflects a gradient of decreasing soil wetness. In the lower areas Juncus articulatus, J. effusus, J. inflexus and Carex otrubae predominated. Associated species included Deschampsia caespitosa, Carex echinata, Molinia caerulea, and Valeriana officinalis.

Zone 1V:
In the upper part the principal species were, Festuca arundinacea, Holcus lanatus, Anthoxanthum odoratum, Briza media, and Carex panicea. Whilst of the herbs, Vicia cracca, Rhinanthus minor, Lathyrus pratensis, Filipendula ulmaria and Lotus uliginous were the most frequent.

In addition the distributions of the ten Carex species which occured, was of interest, and a gradual replacement of one species or group of species was apparent, as one worked from Zone 1 to the top of Zone 1V. The presence of these sedge species indicates meso-eutrophic conditions prevailing at Lowtown and in the case of the species C. paniculata and C. disticha these are both species that show a distinct preference for areas with a considerable fluctuation in the water table. (Jermy and Tutin 1968). C. paniculata is a species of medium base-rich soils and is an important component of the early hydrosere in fens, and it facilitates the establishment of tree species. No species of tree were noted, however. The substratum throughout the area was peaty.

Zone 111 carried a rich orchid flora typical of wet peaty calcareous soils including Gymnadenia conopsea Epipactis palustris, Coeloglossum viride and Listera ovata. Also occurring were Parnassia palustris and Ophiglossum vulgatum. The latter species and Epipactis palustris and Coeloglossum viride have not been recorded in the area before.

Summary:
Thus the area is fen displaying a gradual transition from wet to dry conditions and this is reflected in its flora, particularly in the species of Carex. The vegetation also indicates that the ground water is mineral rich and that meso-eutrophic

conditions prevail. The abundance and vigour of Phgragmites in the central reedswamp area is possibly due to drainage operations which have lowered the water table considerably.

Locality 2. Holdenstown Bog. S87/85

This name in fact, applies to a complex of two kettle holes, the southern one of which was vistied. Brunker in his flora described this southern kettle hole as consisting of open water. This was in 1937 as all of his records from the area date from that time. Only a small area of open water now occurs.

The central portion of the area is occupied by a small raised bog which was approximately 0.75 metres above the level of the surrounding scraw vegetation. For the purposes of description, three types of community can be distinguished.

Type 1:
This is an area of open water at the western end of the bog containing Potamogeton natans, Lemna trisulca, and L. minor. A floating mat of Carex rostrata fringes the pool.

Type 11:
This type consists of a floating mat of scraw vegetation dominated by Juncus acutiflorus, J. conglomeratus, Carex otrubae, C. echinata, Equisetum fluviatile, Potentilla palustris, and Agrostis stolonifera. The mosses Acrocladium cuspidatum (Hedw.) Lindb. and Aulacomium palustre. (Hedw) Schwaegr. were frequent. This type abuts the raised bog proper, which occurs to the east of the area of open water. The scraw extended to the margins of the entire area and here Agrostis stolonifera, Anthoxanthum odoratum, and Lythrum salicaria, were dominant.

Type 111:
Three releves, using the Braun-blanquet method, were taken in this community. This type is the raised bog proper and Table 11 shows the constituent species and their cover values, of two of these releves.

Table 11

Species	Releve 1.	Releve 2.
Calluna vulgaris	2	4
Sphagnum sp.	2	3
S. papillosum.	4	-
Molinia caerulea.	3	1
Eriophorum vaginatum.	2	1
Juncus acutiflorus.	1	1
Carex curta.	+	+
C. limosa.	+	-
C. echinata.	1	-
C. rostrata.	1	+
Vaccinium oxycoccus.	2	2
Juncus effusus.	+	+
Menyanthes trifoliata.	+	+
Agrostis stolonifera.	1	-
Potentilla palustris.	+	-

Table 11 (Continued)

Species	Releve 1.	Releve 2.
Luzula multiflora.	-	+
Succisa pratensis.	-	+
Potentilla erecta.	-	+
Aulacomium palustre.	1	-

The first releve was taken near the edge of the raised bog where it abuts on the margin of the scraw zone. The second releve was taken at the centre of the bog. Here conditions were drier and it can be seen, by reference to Table 11, that this is borne out by the dominance of Calluna and the absence of the palustrine species, Carex limosa, C. rostrata, Potentilla palustris, and Aulacomium palustre. In the drier southern part, Birch, Betula pubescens, had invaded the bog surface. Whilst bog growth has probably ceased here, peat development may still be taking place along the wet bog margins and in the adjacent scraw area.

In conclusion, the area shows a succession in its vegetation types from the open water of the kettle hole to the raised bog, to the most mature parts of which have been invaded by Birch. The occurrence of Carex limosa is of interest as this is its on only locality in Wicklow. Notwithstanding the absence of many typical raised bog species at Holdenstown, this bog can be regarded as one of the most easterly outliers of the raised bog community found in the Midlands and the only bog of its type in County Wicklow.

Locality 3. Gravel spread at Tuckmill. S87/92

Though referred to as a moraine by Brunker (1950) strictly speaking it is a gravel spread. The deposit was laid down in water, impounded at a retreating ice lobe and is associated with the general retreat of the Midlandian ice, in the area. (Farrington and Mitchell 1973). It has subsequently been dissected by fluvial action.

A cursory examination of the vegetation of the deposit showed that a community of calcareous grassland species dominated the lower slopes whilst a thin strip of deciduous woodland occurred at the top. The deposit consists of large mounds of material alternating with damp hollows. The slopes of these mounds were dominated by Knautia arvensis, Trisetum flavescens, and Briza media, with Linum catharticum, Daucus carota, and Medicago lupulina, the common associates. The hollows contained a similar flora but Reseda luteola, Festuca rubra, and Verbascum thapsus were the associated species. In areas with a steep slope and where open and dry conditions prevailed, Pilosella officinarum, was the dominant species with Leontodon hispidus, Briza media and Arenaria leptoclados.

The thin strip of woodland on the top of the deposit was dominated by Quercus robur, and Fraxinus excelsior. The ground flora was very poor and consisted mainly of Sanicula europea, Veronica chamaedrys and Fragaria vesca. Hawthorn, Crataegus monogyna, was

the only species in the shrub layer.

General Summary:

The Baltinglass area thus presents a number of diverse habitats which owe their origin to the depostion of calcareous material of glacial origin. This allowed the development of a diverse flora which contains many communities characteristic of the Midlands and whose distributions in Wicklow is limited to this area.

Acknowledgements:

Thanks are extended to all those who provided transport to Baltinglass for this meeting, and to all members who attended and helped to collect data in the field.

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CURRENT TAXONOMIC AND DISTRIBUTIONAL RESEARCH ON THE GENUS ROSA IN IRELAND.

T. O'Mahony

As the problems facing the Irish and British Rhodologist echo on a smaller scale those of his European mainland counter-part it seems best to firstly give a brief account of the present taxonomic situation pertaining to European Rosa in general.

The genus Rosa has long been recognized as among the most taxonomically difficult in the European Flora. It is now appreciated that rampant hybridization within the genus is responsible for the taxonomic chaos to date- for the early Rhodologists, unaware of this all-important fact, described a great many species and varieties from what in actuality were hybrid swarms - and thus effectively obscured the limits of the true species. The present day situation is hardly more satisfactory, with descriptions of certain species being largely contradictory, and with little general agreement on either the recognition or parentage, of many hybrids. Clearly a radical overhaul of the genus is urgently needed.

The only comprehensive account of British Rosa is that of Wolley-

Dod (1931-1932). However, as this work incorporates most of the faults previously mentioned, its current practical value is of a very limited nature. Of the fourteen species of Rosa recognized by Melville (1975) as indigenous to the British Isles, all have been recorded from Ireland at one time or another in the past. Knowledge of Irish Rosa has taken a retrograde step in recent years, and there now appears to be dounts about the occurance of some of the above species in the Irish Flora. For example, the Census Catalogue (1972) omits Rosa dumetorum Thuill., Rosa afxeliana Fr. and Rosa coriifolia Fr. While up-dated records for the latter two species are badly needed, I can see no reason to doubt the early records. Rosa dumentorum certainly occurs, and should prove widespread.

Although I only began a study of Irish Rosa in 1973, my observations to date (limited in time and area as they are- being mostly confined to Mid and East Cork) highlight the following points.

Rosa dumetorum Thuill is widespread and locally frequent to common in Co. Cork (H3-H5) from which county it has not previously been recorded. I have confirmed the earlier records for Kerry (H1-H2) and South Tipperary (H7), and have also found the species in Waterford (H6). Indeed, as the earlier records suggest, this rose should ultimately prove quite frequent in many parts of the country. It is a very distinct and readily recognized species - virtually all of the populations I have so far examined were very stable morphologically. This 'purity' seems to be directly attributable to the absence of hybrid swarms involving this species, in these areas.

Rosa sherardii Davies. This species is probably quite frequent in many parts of Ireland, where it has been confounded until lately with forms of Rosa tomentosa Sm. (a situation common throughout Europe). Consequently, a re-assessment of the actual distribution and frequency of both species is badly needed: to this end, a key for de-limiting the two species is essential. While R. sherardii has long been known from Kerry (Scully 1912), it is new to Co. Cork, where I find it widespread. It has recently been recorded from Waterford. (see Ir.Nat.J. 18 : 85, July 1974).

Rosa micrantha Borrer ex Sm. The recorded distribution of this species to date; Kerry (H1-2) and Cork (H3-5) is surely more apparent than real. Certainly, atypical (hybrid?) forms occur at Tallow-Bridge, Waterford (H6), where I found them in 1974. However, as this station is an old river-demesne, its status here is somewhat dubious, though it is quite likely to occur in those parts of Waterford, South Tipperary and Limerick abutting the East Cork border. In (H5) at least, the 'pure' species seems to be largely replaced by hybridized populations with various other species.

Rosa stylosa Desv. A rather beautiful and very distinctive species, local throughout Europe. It is likely to prove more widespread and frequent here than the literature records suggest - these merely reflecting an unfamiliarity with this species by successive generations of Irish botanists. I have

confirmed its occurance in (H4-5) and in (H7). The Irish populations have been referred to the varieties systyla and virginea (cf.W.-Dod, 1931-1932) though I place little credence in the value of the varieties under R. stylosa as recognized by Wolley-Dod. Therefore I would greatly welcome specimens from elsewhere in Ireland (posted 'fresh' in a polythene bag if possible) to try and determine the range of variation exhibited by R. stylosa in Ireland.

Some Notes on Hybrid Rosa:

Due to the unique reproduction system in Rosa, crossings are largely matroclinal, i.e. the resultant hybrids usually closely resemble the female parent; thus as Melville (1975) points out on purely morphological grounds it is often possible to judge with reasobable accuracy, in which direction the cross has taken place. Conversely, identification of the pollen parent is often extremely difficult, as usually it contributes few distinctive characters to the hybrid. It follows therefore, that the determination of a hybrid's parentage purely from an assessment of its gross morphological characters, is far from conclusive. Yet many named hybrid combinations labour under precisely this defect! Artificial hybridizations, followed by cytological examinations, are badly needed, to confirm or refute such morphological determinations.

New Irish Hybrid Rosa. (Kindly determined by R. Melville, Kew.)

1) Rosa sherardii Davies x R. rubiginosa L.
(H4-5) Locally common in East Cork, where R. ruhiginosa is not recorded, and where it largely replaces R. sherardii. Scattered stations in Mid Cork. Probably also in West Cork and possibly Kerry.

2) Rosa micrantha Sm. v. operta (Pug.) W.-Dod.
("This may be R. micrantha x arvensis").
(H5) Only known from East Cork (Midleton) so far.

3) Rosa micrantha Sm. v. briggsii Baker.
"Probably R. micrantha x stylosa - an exceptionally interesting find, only previously reported from Devon".
(H5) Only known as a single bush from near Midleton, East Cork. Apparently extinct in Devon.

At least three other as yet undetermined hybrid combinations occur in East Cork - possibly all new to Ireland. These results strongly suggest that many additional hybrid combinations occur in Ireland, which have not hitherto been suspected. Furthermore, due to the differing phytogeographical ranges of certain Rosa species in Britain and Ireland, certain hybrids may prove more frequent here, and others rarer than in the larger neighbouring island. A postulated example of the former case would be a cross between Rosa arvensis and R. sherardii - the distributions of both species being largely sympatric throughout Ireland, while conversely, their distributions are largely allopatric in Britain. The only hybrid so far recorded for Ireland, but not for Britain is Rosa agrestis Savi x sherardii Davies. (see R. McMullan, Ir.Nat.J. 17 July 1972).

Only binary hybrids have so far been recorded from Ireland, though some triple hybrids are likely to occur - though this might be very difficult to prove. In conclusion, the less

conspicuous hybrids will undoubtedly continue to be overlooked in the field, but good descriptions of the more distinctive hybrids should provide the basis for mapping their distributions and frequencies more accurately in the years ahead.

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GROUND BEETLE COLLECTING IN THE DUBLIN AREA

M.L. Luff

During the weekend of 24-26 September, 1976, a group of entomologists and would-be beetle hunters spent some time learning about and collecting ground beetles or Carabidae in the Dublin area. It was hoped that members of the group would gain experience and interest in these insects, so that they could contribute records to the Ground Beetle Distribution Scheme.+

After spending Friday evening and Saturday morning examining Carabidae in the Department of Agricultural Zoology, U.C.D., and learning some of the intricacies of identification, most of the Saturday afternoon was spent on N. Bull Island (O/24.38), searching under stones on the main ridge of the island, where the following species were found: *Carabus granulatus L., *Nebria brevicollis (F.), *Harpalus aeneus (F.), *H. rufipes (Deg.), *Bradycellus verbasci (Dft.), *Amara apricaria (Pk.), *A. aulica (Panz.), *A. bifrons (Gyll.), *Pterostichus

madidus (F.), *P. melanarius (111), *P. niger (Schall.), P. versicolor Sturm, Calathus melanocephalus (L.), C. fuscipes (Gz.) and Dromius linearis (01.). These are mostly common species, althouth both C. granulatus and P. versicolor appear to be less restricted in their habitats in Ireland than in England.

Collecting on the sand dunes was less successful, as the ground was saturated following heavy rain, but Calathus mollis (Marsh), a species characteristic of this habitat, was found. On a previous occasion Carmel Mothersill had taken *Harpalus punct-iceps Steph. (det.M.L.L.) at this site, and there are old records of Amara tibialis (Pk.) and A. praetermissa (Sahlb.), all local sand-inhabiting species.

As the tide fell, collecting moved on to the higher sections of the salt marsh, where two species typical of this habitat were found: *Bembidion normannum Dej. and Dicheirotrichus gustavi Cr.

Encouraged by the finding of 18 species in one site, the party moved on to the south-facing shore of Howth (0/2736). By this time, however, heavy rain had begun again, and only Agonum ruficorne (Gze.) and B. verbasci were taken before further collecting was abandoned. There are interesting old carabid records from Howth, including the coastal Trechus fulvus Dej. and Aepus species (the latter live in sand-filled rock crevices between tide marks), so further collecting in the area might be rewarding.

On Sunday morning, a somewhat reduced party set off for the Wicklow mountains, stopping first to collect briefly at the Scalp, near Enniskerry (0/2219), where P. madidus was taken again. The latter part of the morning was spent at Knocksink Wood (0/2216), where several species of ground beetle were found, mainly under shingle by the stream: Notiophilus biguttatus (F.), Bembidion atrocoeruleum Steph., B. decorum (Panz.), B. tetra-colum Say, B. tibiale (Dft.), together with further A. aulica, A. ruficorne and P. madidus.

Despite increasingly ominous clouds, the party then moved inland to Lough Bray. On the way a stop was made at Glencree Resevoir (0/1417) to try and find Carabus violaceus L., previou-sly recorded from this site by Carmel Mothersill (Fieldfare, 1975 : 5). C. violaceus is very rare in Ireland, although widespread in the rest of the British Isles; unfortunately the indenity of the specimen mentioned in'Fieldfare' has not been checked by the author, and the beetle has now been lost. This conspicuous species was not rediscovered, but remains of Dromius meridionalis Dej., one of the few arboreal Carabidae, were found under bark of a tree stump; N. biguttatus also occurred near the reservoir.

At Lough Bray (0/1315) rain was falling heavily and the shore was under two feet of water. Limited collecting on the peaty slopes between the lough and the road did, however, result in N. biguttatus (again). A ruficorne, Pterostichus nigrita (F.)

and Abax parallelopipedus (Pill. and Mitt.) (the latter normally a woodland inhabitant).. The weather forced a hasty retreat and the next stop was at Blessington Bridge(N/9815) N.E. of Blessington, where new finds on the reservoir shores were Bembidion femoratum Stm., B. punctulatum Drap., B. saxatile Gyll, together with further specimens of A. ruficorne and P. nigrita. Two of these species of Bembidion, namely B. punctulatum and saxatile are local and uncommon.

The final collecting of the afternoon was at sandpits at Ballymore Eustace and Blessington, as many Carabid species normally inhabit sandy soil with sparse vegetation. The damp soil hindered collecting, but species found at Ballymore Eustace (N/9208) were Nebria brevicollis, N. salina Fairm. and Lab. (a sandy habitat species), Notiophilus biguttatus, N. substriatus Wat (more local than the preceding species), Clivina fossor (L.) a subterranean carabid), Bembidion femoratum, B. harpaloides Serv. (usually found in woodland), B. lampros (Hb.), B. stephensi Cr. (usually coastal), Badister bipustulatus (F.), Agonum marginatum (L.), P. madidus and nigrita, Calathus fuscipes and Trechus obtusus Er. Less time was spent at Blessington (N/9715) where only N. salina, N. substriatus, B. femoratum, Agonum mulleri (Hb.) and Olisthopus rotundatus were taken.

In all, 41 species were found during the two days collecting, which is nearly an eight of the entire ground beetle fauna of the British Isles and nearly one fifth of the Irish species. No great rarities were discovered, but several species were found in habitats in which the author's English experience would not have placed them: the habitats and distribution even of common species may therefore be of particular interest in Ireland. Single specimens of Pterostichus nigrita from both Blessington Bridge and Ballymore Eustace sandpits had the legs, which are normally all black, with the basal segments (coxae, trochanters and femora) yellow. This may be caused by the specimens being newly-emerged, but their cuticle was hardened, and it is more likely that the specimens represent a new variety of the species. Collecting in the spring, when all adults of this species are mature, should confirm this. The range of species found in a short time gave adequate experience of ground beetles to those attending the weekend meeting, and it is hoped that this will lead to further study of Carabidae in both Dublin and other parts of Ireland.

I must express my gratitute to all those who made my visit to Dublin possible; in particular to Carmel Mothersill, Declan Doogue and staff of the Agriculaural Zoology Department, U.C.D. I also wish to thank the Irish Biogeographical Society for contributing towards my expenses.

+ See Carmel Mothersill's article on distribution schemes in operation.

* Species new to the Bull Island list: see Jeffery D. (Editor). 1977; N. Bull Island, Dublin Bay: a modern natural history; R.D.S., Dublin.

IRISH BIOLOGICAL RECORDS CENTRE OPEN DAY

C. Mothersill

The Irish Biological Records Centre, run by the Planning Division of An Foras Forbartha, held an Open Day and Seminar on Monday 20 December last. The purpose of the day was:-

a) to let teachers, recorders and members of the public see what the Centre was doing
b) to give recorders an opportunity to air their views on the running and policy of the Centre.

A display showed the involvement of the Centre in Education, Planning and Conservation as well as giving details of the recording schemes in operation. Various publications were also available. A full programme of lectures was organised which covered the dual role of the Centre in education and recording. During the morning Dr. Cabot, head of the Planning Division, outlined the function of the Centre, it's accomplishments to date and its plans for the future. Mr. Richard McMullan, a biology teacher at St. Columba's College, discussed the importance of the study of natural history within biology curricula and regretted the fact that at present examination pressures have pushed natural history into the position of being a leisure activity rather than an integral part of courses.

Much press publicity was given to the presentation by the Department of Lands of a cheque for £4,000 to help run the Biological Records Centre. Also highlighted in the papers was a film dealing with Irish mammals, made by some Carmelite school for boys from Cork. The film was of very high quality and was appreciated by all present.

Of more interest to I.B.S. members was the afternoon session during which recording was discussed.

Eanna Ni Lamhna (who runs the Irish Biological Records Centre) talked about the proceedures involved in getting from the field record to the dot on a map in an atlas. She discussed the schemes already in operation i.e. the Mammal scheme which is almost complete and is going into a third edition and the Butterfly scheme which is proceeding successfully and is reaching a third edition as well. Schemes planned for the future are a Dragonfly scheme and a scheme to select and record 100 rare plant species.

Carmel Mothersill gave an account of the state of recording in Ireland, indicating the gaps which exist in the recording of various taxonomic groups. She made reference to a publication which resulted from a questionnaire, sent to Irish recorders/biologists, designed to obtain information on the taxonomic expertise available in the country and to indicate what biologists are prepared to do for beginners. This publication contains a list of about 60 people who will help beginners, together with a list of scheme organisers, and a list of material required by various biologists. The booklet is available from the Records Centre or from its author.

Mr. Declan Doogue then discussed the problems involved in running a recording scheme. As one of the few people in the country who is independently managing a scheme he had lots of useful advise to offer for anyone preparing to organise schemes. He outlined the amount of work involved and the importance of returning named specimens to collectors in order to build up a body of people around the country with useable reference collections and thus he suggested that the main difficulty was getting around to cover the bulk of the thousand 10km. squares in the country.

The remainder of the evening was given over to open discussion on the work which the records centre is or is not doing. A significant feature of the discussion was the concern about the role of the Centre in a situation where an individual runs a scheme. Dr. Cabot assured recorders that their interests would be protected, and that full recognition would be given in any publications. Discussion then centered around the validity of records and how this can be assessed. Specifically the controversial discovery of two butterflies new to Ireland (the Chalk-hill blue and the Small Skipper) was mentioned. Dr. Cabot stopped the discussion (which was becoming heated) by saying that the Centre had recently set up referee panels, consisting of acknowledged specialists, for assessing the authenticity of dubious, disputed or unlikely records.

23 Springfield Rd,
Templeogue,
DUBLIN 6.

WHAT IS A BIOLOGICAL RECORD?

M.C.D. Speight

All too often so-called biological records that are published are lacking in critically important information, much decreasing their usefulness. In particular, people with primarily ecological interests are often sloppy about taxonomic data they present in their records, while taxonomists are sloppy about presenting ecological data. I doubt that it is possible for a definitive account to be written of what a biological record should comprise, because of the differences between ecological data appropriate to records of different groups of organism, but the minimum data desirable certainly can be identified.

Ideally, a biological record is a piece of published text plus a specimen upon which the text is based, the specimen being deposited in a named institution such that it can be examined by subsequent workers. It is thus necessary to consider not only what might constitute a meaningful published record, but also what data should be attached to a voucher specimen. Some discussion of related topics, in particular of the form in which biological records can be received for incorporation into computerised data banks, is presented in Heath et al (1972).

A. The Voucher Specimen

Information desirable to have attached to the specimen:

1. On data lable:
   a) locality data, including:
      (i) geographical data:
         - 4 fig. nat. grid ref. (In Ireland, instructions showing how to take grid refs. are given on all ½ inch maps)
         - altitude (worth recording if over 700ft., in Ireland)
         - County (no need for vice-county as well)
         - Country
      (ii) ecological data:
         - date of collection (advisable to give century in full, as your specimen may well survive into the next century, even if you don't! advisable to spell out the month because when dates are quoted in Europe the month is given second, e.g. 2 Nov. 1976, whereas in the USA it is given first e.g. Nov.2 1976, leading to confusion if on a specimen a date is given as 11.2.1976!)
         - ecotype in which collected (e.g. dry grassland, old deciduous woods etc.)
         - what the specimen was doing when caught (e.g. on flowers of Heracleum) if an animal; specimens collected in coitus should be retained together wherever possible, and the fact that they were collected in cop. should also be mentioned on the data label
         - any other ecological data needed for that particular taxonomic group
         - method of collection (if animal specimen is involved)
   b) collector's name

2. On determination label:
   a) latin name of organism plus name of describer of organism
   b) name of identifier, plus date of determination

N.B. Data not on the labels attached to a specimen cannot be recorded in later publications: much museum material is well-nigh worthless as a source of distribution data due to inadequate labelling by collectors.

B. The Published Record.

1. In a published record of the occurrence of an organism, all the information given under A above should ideally be included.
2. Where voucher specimens have been retained one of these should be deposited in the collections of some institutions where curation is reasonably effective and specimens can be examined by other workers, and the location of the

deposited specimen should be noted as part of the published record.

3. If texts have been used in order to determine the specimen(s) being recorded, these texts should be named as part of the published record, especially if reliably determined reference specimens have not also been available as a check on the indetity of the specimen(s) being recorded.
4. There is also a need to quote the source of the nomenclature used in the record being published: names of organisms change sufficiently frequently for this to be vital.

Unfortunately, most publications either cannot afford to publish records properly, or else just do not take biological records sufficiently seriously to apply very rigorous standards, when considering records in manuscripts presented to them for publication. This "half a record is better than none" approach may save authors a significant amount of trouble, and provide convenient "space-fillers" for journals, but it drastically reduces the value of the records published, leaving a general feeling that published records are unreliable. Indeed, the situation is generally so bad that in major works on distribution authors frequently adopt the practice of ignoring all previously published records other than those backed by specimens they have themselves been able to examine!

It is probably noticeable that so far in this account I have avoided all mention of IBRC and BRC-type distribution-mapping schemes. Suffice it to say that the distribution maps they have engendered so far are of rather limited value: the validity of distribution data so far presented cannot be assessed or checked from these publications, since the criteria used for screening putative "records" are never stated. Neither is the source of the nomenclature used in these distribution maps quoted, and with the exception of the BSBI and RSPB plant and bird atlases (which include overlay maps of various ecological parameters) they include no ecological information about the sites from which the organisms have been recorded.

REFERENCES

Heath J. and Scott D. (1972) Instructions for recorders. Biol. Records Centre, N.E.R.C., England.

SUBMITTING SPECIMENS OF INVERTEBRATES FOR IDENTIFICATION

- a recipient's viewpoint

P.T. Harding

British Isopoda Study Group

Biogeography could be defined as the study of the geographical and ecological distribution of organisms. The generalised geographical distribution of several groups of invertebrates in Britain and Ireland is being studied through various

recording schemes.

In the study of any group of organisms it is inevitable that, on occasions, help from other workers with identification will be required in order to build up one's own reference collection: written keys are useful, but few are really useable without a reference collection of reliably identified specimens.

Having been involved with running a recording scheme for Non-marine Isopoda for over 6 years I have experienced many bizarre methods for sending specimens of woodlice and waterlice for identification. Apart from this I seem to have involved myself with a considerable amount of postal traffic of "bugs" for identification and therefore may be able to offer some advice to collectors who intend to send specimens for identification or verification to experts elsewhere, via the postal system.

Before you start collecting

Find out whether the relevant "expert" is willing to receive specimens from you, and if so, under what conditions. The acknowledged "expert" may not be willing to identify material but he may be able to tell you who is capable of making reliable identifications and is willing to do so.

Collecting

Make sure you get all the animal, as undamaged as possible; all too often specimens arrive with, for example, the legs or antennae missing and these may be vital for identification.

Labelling.

Labelling is arduous and time-consuming, but 2 minutes spent labelling a specimen that took 58 minutes to find, makes the 1 hour's work worthwhile. The specimen itself must be labelled, it is not good enough to give a sheet of data for a group of specimens identified only by code-numbers. All too often the data gets separated from the specimens and one is left with a batch of cryptically labelled specimens which means nothing to anybody. The ideal label gives the following data:

Locality: the nearest townland or topographical feature shown on Ordnance Survey maps.
County or Vice-county:
Grid reference: 100km square letter (or numbers) and 10km, 1km or 100 mm square co-ordinates - the more detail the better.
Date of collection: at least **month and year**, preferably the full date.
Name of collector: name not initials.
Habitat information: as much as you can give.

Don't forget that some invertebrates eat paper labels!

Preservation

The "expert" who will be doing the identification would hopefully be able to advise on how to preserve specimens. There are two useful books dealing with this topic: Wagstaffe and Fidler (1955) give information for all invertebrate groups; Oldroyd (1958) deals with insects only. Several groups should really be preserved in 70% industrial methylated spirit

which is not available without an excise licence, but Isopropyl alcohol, surgical spirit, duplicating spirit and mineralised meths are generally available and all are acceptable substitutes for temporary preservation. It may be worth telling the recipient what preservative is being used.

Posting

Two points that may be worth remembering: if the parcel is kept small (eg. using small tubes for preserved sprcimens) the cost is less, and ample light packing is essential for all types of material.

Most of the "experts" who will identify material don't do it for a living, some of us take a long time to return specimens, especially during busy periods. Don't give up hope after only a couple of weeks: a gentle reminder every month might spur some of us into greater activity.

REFERENCES

Oldroyd H. (1958) Collecting, preserving and studying insects. Hutchinson, London.

Wagstaffe R. and Fidler J.H. (1955) The preservation of natural history specimens. Vol. 1, Invertebrates. H.F. and G. Witherby, London.

THE IRISH BIOGEOGRAPHICAL SOCIETY

MEMBERSHIP LIST 1976 - 1977

Allen, Mrs. Anna, Foxhall, Newmills, Letterkenny, Co. Donegal.
Allott, Norman, 25 Leeson Park Avenue., Dublin 6.
Arnold, Brendan, Corduff Hall, Lusk, Co. Dublin.

Bassett, Miss Anne, 46 Villa Park Ave., Navan Road, Dublin 7.
Blackith, Dr. Robert M., Zoology Dept., Trinity College Dublin 2.
Brindley, James R., 2 Alexandra Villas, Rockfort Ave., Dalkey.
Browne, Mrs. Nuala, Farnogue Terrace, Wexford.
Buttimore, Miss Carol, 86 Merrion Road, Ballsbridge, Dublin 4.

Caffrey, Jospeh, 30 Iona Crescent, Glasnevin, Dublin 9.
Carvill, Peter H., Thornberry, Kilgoblin, Co. Dublin.
Casement, Patrick J., Park H.Q., National Park Killarney, Kerry.
Chadwick, Miss M., 8 Knockashee, Dundrum, Dublin 14.
Connaughton, Miss Siobhan, 17 Ramleh Park, Milltown, Dublin 14.
Cross, Dr. J.R., Forest & Wildlife Service, Sidmonton Pl., Bray, Co. Wicklow.
Curtis, Thomas G.F., St. Michael's, Meath Road, Bray,Co. Wicklow.

Dawson, Miss Norah, 14A Dobbin's Grove, Armagh, Co. Armagh, BT60 IBG
Doogue, Declan, 12 Glasilawn Road, Dublin 11.
Duff, Miss Margaret, An Foras Forbartha, St. Martin's House Waterloo Road, Dublin 4.

Early, John, The Walk, Roscommon, Co. Roscommon.

Forbes, Dr. Ralph S., Dept. of Extra Mural Studies, The Queen's University of Belfast, BT7 INN.
Furlong, Stephen, Dept. of Zoology, University College, Belfield, Dublin 4.

Gallagher, John, Botany Dept., Trinity College, Dublin 2.
Good, Jervis, Glenny, Riverstick, Co. Cork.
Goodwillie, Roger, 49 Thornhill Rd., Mt. Merrion, Co. Dublin.
Goyvaerts, Patrick, Gleann Garbh, Co. Cork.
Greeson, Prof. R.A., Cleerise House, Strand Rd., Castlegregory, Co. Kerry.
Guiny, Dr. Michael D., Portsmouth Polytech, College, Portsmouth, England.

Harding, Dr. Paul T., 60 Bosworth Road, Elsworth, Cambs. England.
Harrington, Miss Anne, 1 Crannagh Grove, Rathfarnham, Dublin 14.
Harrington, Thomas J., St. Michaels, Meath Rd., Bray, Co. Wicklow.
Hennessy, Miss Mary, School of Botany, Trinity College, Dublin 2.

Heslin, Miss Catherine M, Smithstown House, Maynooth, Co. Kildare.
Heuff, Miss Hester, Dept. of Botany, University College, Belfield, Dublin 4.

Kirby, Edmund N., Dept. of Botany, University College, Galway.

James, Miss Anne, La Verna, Mountgorry, Swords, Co. Dublin.
Jeffrey, Dr. David W., School of Botany, Trinity College, Dublin 2.

Keane, Mrs. Mary-Angela, Keanes Hotel, Lisdoonvarna, Co. Clare.

Lamb, Henry, Ballykilty, Malahide, Co. Dublin.
Levinge, Miss Daphne, Creaghduff, Coosan, Athlone, Co. Westmeath.
Lockhart, Neil, 4 Forthfield Pk., Terenure, Dublin 6.
Long, Michael, Strand Street, Dingle, Co. Kerry.

Mangan, Sr. Eilish, Dominican Convent, Sion Hill, Blackrock, Co. Dublin.
Minchen, Daniel, Fisheries Division, Dept. of Agriculture and Fisheries, 3 Cathal Brugha St., Dublin 1.
Mitchell, Prof. M.C., Dept. of Botany, University College, Galway.
Moore, Colm, Dept. of Botany, University College, Belfield, Dublin 4.
Mothersill, Dr. Carmel, 23 Springfield Rd., Templeogue, Dublin 6.
Murphy, Miss Catherine, Garden Flat, 6 Vergemount Hall, Clonskeagh, Dublin 6.
Murphy, Miss Eileen Glen Eden Upper, Sandycove, Co. Dublin.

Mac Daeid, Mrs. C., 12 Coolmine Close, Clonsilla, Co. Dublin.
McClintock, Mrs. Mary, Doon, Newmills, Letterkenny, Co. Donegal.
McCormack, Francis, Geography Dept., University College, Belfield, Dublin 4.
McDermot, Peter, 36 Granville Pk., Blackrock, Co. Dublin.
McGinley, Niall, Beechfield, Leitirceanainn, Co. Donegal.
McGrath, David, Zoology Dept., University College Galway.
McGough, N. 46 Strand Street, Skerries, Co. Dublin.
McNally, Anthony, 20 O'Neachtain Rd., Drumcondra, Dublin 9.

Nelson, Dr. C.E., National Botanic Gardens, Glasnevin, Dublin 9.
Norton, Miss Mary A., Grove Road, Finglas, Dublin 11.

O'Connell, Michael, 19 Clifton Crescent, Clifton Pk., Newcastle Co. Galway.
O'Connor, Dr. James, Natural History Museum, Merrion St., Dublin 2.
O'Mahony, Anthony, 6 Glenthorn Way, Dublin Hill, Cork.
O'Mahony Patrick, 3 Model Cottages, Off Blarney St., Cork.
O'Philbin, Marian, 13 Wadelai Road, Ballymun, Dublin 11.

Pitkin, Dr. Peter, School of Botany, Trinity College,Dublin 2.
Parker, Miles, Fisheries Division, Dept. of Agriculture and Fisheries, 3 Cathal Brugha St., Dublin 1.
Perring, Dr. Franklyn, H. B.R.C. Monkswood Experimental Station, Abbotts Ripton, Huntingdon, Cambs. PE17 2LS, England.

Quigley, Michael B. Beverley, Westfield Park, Bray, Co. Wicklow

Ried, Miss Finola, C/o National Botanic Gardens, Glasnevin, Dublin 9.
Rochford, John, Zoology Dept., Trinity College, Dublin 2.
Roden, Cilian, 15 Appian Way, Ranelagh, Dublin 6.
Russell, Miss Jessica, Coollatin, Shillelagh, Co. Wicklow.
Ryan, James B. Forest and Wildlife Service, Sidmonton Pl., Bray, Co. Wicklow.

Scannell, Miss Maura J.P., The Herbarium, National Botanic Gardens, Glasnevin, Dublin 9.
Shackleton, Jonathan, Beechpark, Clonsilla,Co. Dublin.
Sheehy-Skeffington, Miss M. No. 9, 26 Trinity College, Dunlin 2.
Speight, Dr. Martin, C,D,, Research Branch, Forest and Wildlife Service, Sidmonton Pl., Bray, Co. Wicklow.
Synnott, Donal, Abbey Road, Duleek, Co. Meath.

Telford, Michael, B., Wellington Rd., Dublin 4.

Warner, Patrick J., Stonecrop, Slemaine, Roundwood, Co. Wicklow.
Waters, Miss Maura, O'Higgins Road, Curragh Camp,=Co. Kildare.
Webb, Prof. David A., 23 Trinity College, Dublin 2.